

Electrical Safety Manual

2025 Edition

TABLE OF CONTENTS

AERIAL LIFT PROGRAM	1
ARSENIC PROGRAM.....	7
ASBESTOS PROGRAM	10
ASSURED EQUIPMENT GROUNDING PROGRAM	15
BENZENE AWARENESS PROGRAM	19
BLOODBORNE PATHOGENS PROGRAM	24
CADMIUM	29
CONFINED SPACE PROGRAM.....	35
DISCIPLINARY PROGRAM.....	46
ELECTRICAL SAFETY AWARENESS PROGRAM	53
EMERGENCY ACTION PLAN	72
FALL PROTECTION PROGRAM	86
FIRE PROTECTION/EXTINGUISHER PROGRAM	91
FIRST AID MEDICAL PROGRAM	94
FITNESS FOR DUTY PROGRAM	96
FORKLIFT PROGRAM	98
GENERAL WASTE MANAGEMENT PROGRAM.....	106
HAND POWER TOOLS PROGRAM	108
HAZARDOUS COMMUNICATION PROGRAM.....	110
HEAT AND ILLNESS PREVENTION PROGRAM	113
HEXAVALENT CHROMIUM PROGRAM	119
HOUSEKEEPING PROGRAM.....	128
HYDROGEN SULFIDE PROGRAM	130
LADDER SAFETY PROGRAM	133
LEAD AWARENESS PROGRAM	135
<u>LOTO</u> HAZARDOUS ENERGY PROGRAM.....	137
LOCKOUT TAGOUT PROGRAM	143
NFPA 70E PROGRAM.....	147
NOISE EXPOSURE HEARING CONSERVATION PROGRAM.....	156
PANDEMIC PREPAREDNESS PROGRAM.....	159
PERSONAL PROTECTIVE EQUIPMENT PROGRAM	166
RADIO FREQUENCY PROGRAM	170
RESPIRATORY PROTECTION PROGRAM	177
RIGGING MATERIAL HANDLING PROGRAM	181
SCAFFOLDS PROGRAM	184
SILICA EXPOSURE PROGRAM	187
SILICA PROGRAM	194
SPILL PREVENTION PROGRAM	199
SUBCONTRACTOR MANAGEMENT PROGRAM.....	202
TRENCHING, SHORING AND EXCAVATION	205
VEHICLE SAFETY POLICY PROGRAM.....	209
WELDING AND HOT WORK PROGRAM	211

AERIAL LIFT PROGRAM

A. PURPOSE AND SCOPE

This policy applies to all OlympiaTech owned equipment designed to elevate personnel on a platform that is propelled by a powered lifting device, with the controls located on the platform itself. Examples of aerial platform lifts include one-man lifts, scissor lifts, boom trucks, cherry pickers, etc.

B. RESPONSIBILITIES

Risk Management and Safety Responsibilities

- Policy: To develop an aerial platform lift policy and revise it when necessary.
- Training: To provide for the training of operators and users of aerial platform lifts, upon request by supervisors and to maintain training records.
- Technical Support: To provide technical support to employees when questions or concerns arise with regards to aerial platform lift safety.

Maintenance, Inspection and Repair

- OlympiaTech is responsible for each aerial platform lift and shall arrange for maintenance that is appropriate for their lift. OlympiaTech shall establish a preventive maintenance program based on the manufacturer's recommendations, the environment it is to be used in and the frequency at which it is to be used.
- Modifications to the equipment will not be made without written approval from the manufacturer.

Inspection

- OlympiaTech shall ensure that pre-start inspections, frequent inspections and annual inspections are being performed on the lift.

Repair

- When safety related items have been discovered, the lift shall be placed out of service until the item(s) has been repaired. All replacement parts or components that are replaced shall be identical to or equivalent to the original parts based on information provided by the manufacturer or supplier.

Training

- OlympiaTech is responsible for arranging for the training of all authorized users of the lift through the Safety Department. No personnel shall operate or ride on an aerial platform lift if they have not been trained.
- OlympiaTech shall insure that aerial platform lift maintenance is performed only by personnel who are trained in aerial lift maintenance.

Responsibilities Involving Contractors

- OlympiaTech is responsible for conveying certain information to contractors who use aerial platform lifts to ensure compliance and safety on property. Records Retention

- Employees shall date and retain the following records for each aerial platform lift they own:
 - Serial number and date of purchase
 - Written records of the frequent and annual inspections and repairs performed. This shall include deficiencies found, corrective actions taken and the identification of the person(s) who performed the inspection and repairs.
 - Written records of repairs made on the lift.
 - Training records for any employees trained in maintenance of the aerial platform lift.

Employee/User Responsibilities

- Employees using aerial platform lifts must review and acknowledge that they have reviewed the operating manuals for all lifts that they use. Documentation of this shall be established by having the employee review and sign the form titled "Operating Manual Acknowledgement Form. The user is expected to know and understand the following about the lift he/she operates prior to initial operation of the lift:
 - The operation of the lift.
 - All placard warnings.
 - All safety devices on the lift.
 - Where to locate the user manual.
 - Who can operate or use the platform lift.
 - All control features of the lift
 - If the user does not understand any of the above he/she shall consult with his/her supervisor prior to using the lift.

Inspection and Maintenance

- Users shall inspect and maintain the aerial platform as required by OlympiaTech to ensure proper operation. Note that some employees may be approved to operate but not to perform maintenance on the lifts. However, all users shall perform pre-start inspections on the lift prior to each day's use of the lift. Documentation of the pre-start inspections shall be done by completing an "Aerial Platform Lift Pre-Start Inspection Form". Aerial platform lifts that are not in proper operating condition shall be immediately removed from service and reported to the appropriate departmental supervisor.

Workplace Inspections

- Prior to setting up the lift at each new location the user shall conduct a workplace inspection to identify potential hazards.

Training

- Only trained employees may operate or use aerial platform lifts. Likewise, only trained and authorized employees may perform maintenance duties on the lifts.

Training Program

- All operators and users of aerial platform lifts shall attend an aerial lift training session sponsored by the Safety Department. The contents of the training will include the following:
 - Purpose and use of manuals.
 - Pre-start inspection process.
 - Identification of malfunctions and problems.
 - Factors affecting stability.
 - Purpose of placards and decals.
 - Workplace inspections.
 - Safety rules and regulations.
 - Authorization to operate.
 - Operator warnings and instructions.
 - Operation of the aerial platform.
 - Demonstrate competency.

Inspections

- The inspection process is a critical step in preventing aerial lift accidents that are caused from faulty or worn out equipment. Aerial platform lifts that are not in proper operating condition shall be removed from service until the problems have been corrected by an authorized and trained maintenance technician.

Frequent Inspections

- Any time an aerial platform lift has not been used for a period of 3 months or more (or after the lift has been purchased) a frequent inspection shall be performed by a qualified person and shall include the following:
 - All functions and their controls for speed(s) smoothness, and limits of motion.
 - Lower controls including the provisions for overriding of upper controls.
 - All chain and cable mechanisms for adjustment wear or damaged parts.
 - All emergency and safety devices.
 - Lubrication of all moving parts, inspection of filter element(s), hydraulic oil, engine oil, and coolant as specified by the manufacturer.
 - Visual inspection of structural components and other critical components such as fasteners, pins, shafts and locking devices.
 - Placard, warnings and control markings.
 - Additional items specified by the manufacturer.
 - Annual Inspections

Pre-Start Inspections

- Before each day's use or at the beginning of each shift that the aerial platform lift is used it shall be given a pre-start inspection which is a visual inspection and functional test that includes the following criteria:
 - Operating and emergency controls.
 - Safety devices.
 - Personal protective devices.
 - Air, hydraulic and fuel system leaks.
 - Cables and wiring harness.
 - Loose or missing parts.
 - Tires and wheels.
 - Placards, warnings, control markings and operating manual(s).
 - Outriggers, stabilizers and other structures.
 - Guardrail system.
 - Other items specified by manufacturer.
- An annual inspection shall be performed on each aerial platform lift each year. The inspection shall be performed by a qualified mechanic who is authorized to perform maintenance duties on the lift. The inspection shall include all items specified by the manufacturer for an annual inspection.

Workplace Inspections

- Before an aerial platform lift is used and during its use, the operator shall check the area in which the aerial platform lift is to be used for possible hazards such as, but not limited to:
 - Drop-offs or holes.
 - Slopes.
 - Debris.
 - Overhead obstructions and high voltage conductors.
 - Hazardous locations and atmospheres.
 - Inadequate surface and support to withstand all load forces imposed by the aerial platform lift.
 - Wind and weather conditions.
 - Presence of unauthorized people.
 - Other possible unsafe conditions.

Standard Procedures

- To ensure safe practices, the following general procedure is used when an authorized user uses an aerial platform lift:

- Obtain any necessary authorization to use the lift.
- Check the last pre-start inspection for any comments or notes.
- Perform a pre-start inspection on the lift, document the inspection and place it in the reserved storage location on the lift.
- Perform a workplace inspection in the area that the lift will be used.
- Extend and adjust the outriggers, stabilizers, extendible axles, or other stability enhancing means.
- Ensure that the guardrails are installed and are in place.
- Ensure that the load being placed on the lift is within the rated capacity of the lift.
- Test the controls of the lift.
- Ensure that all personnel on the lift have been trained and authorized to operate or work on the platform.
- Ensure employees stand firmly on the floor and do not climb on the rails or the edge of the basket.
- Ensure that equipment will have a working back-up alarm or use a spotter when backing
- Ensure a minimum clearance between electrical lines and any part of the equipment is at least 10 feet

Platform Qualifications

- The following criteria shall be met to be an approved platform on a lift:
 - Platform width shall be not less than 18 inches and shall have a slip resistant surface.
 - The platform shall have a guardrail system around its periphery. It is removable or can be lowered. The means used to secure it in the normal operating position shall be readily accessible for inspection and maintenance.
 - The guardrail system shall include a top rail that is between 39 and 45 inches high, a mid rail that is approximately half-way from the platform to the top rail, and a toe board that is at least 4 inches high.
 - When to use personal fall protection
 - When operating articulating, or boom type lifts that are equipped with lanyard tie off points, the use of fall protection equipment is required. If special circumstances exist that encourage the operator to use fall protection on vertical aerial platform lifts, they must tie off to a proper tie off point that is not attached to or part of the aerial platform lift itself.

Markings and Decals

- In addition to any other markings or decals that are placed on the lift by the manufacturer, the following information shall be displayed on all aerial platform lifts in a clearly visible, accessible area and in a durable manner:
 - The make, model, serial number, and manufacturer's name and address.

- The rated workload, including rated number of occupants.
- The maximum platform height.

ARSENIC PROGRAM

A. PURPOSE AND SCOPE

This program outlines the procedures, precautions, responsibilities, and methods used by OlympiaTech to provide for employee safety and health and compliance with the OSHA Inorganic Arsenic Standard. The purpose of this program is to protect employees from potential exposure to arsenic during cleaning of the interior of the boilers. Arsenic is a toxic dust found as a contaminant of the coal used in heating plants. The program is also intended to insure compliance with the OSHA Inorganic Arsenic Standard, as a minimum. Reviews and updates of the written plan must be conducted at least annually.

B. LOCATION

Arsenic is found naturally in the earth. Arsenic levels vary as a contaminant in coal. Exposure may or may not occur, based on whether specific loads of coal have appreciable arsenic levels in them as contaminants. At this time, OlympiaTech considers all entrants into the boilers to have potential arsenic exposure without appropriate personal protective equipment and precautions. Compliance with our program is mandatory for coal fired boiler entry. Boiler cleaning generally only occurs for 1-2 days, 1-3 times per year.

C. EXPOSURE LIMITS AND MONITORING

The permissible exposure limit (PEL) for inorganic arsenic is 10 $\mu\text{g}/\text{M}^3$ as an 8 hour time weighted average (TWA). Sampling has indicated that this level can be exceeded during boiler cleaning operations. Certain requirements of the Standard begin when you exceed the action level of 5 $\mu\text{g}/\text{M}^3$. During boiler cleaning the potential to exceed the PEL can exist therefore, all requirements of the Standard apply to the boiler cleaning operation; full personal protective equipment (PPE), respirators, engineering controls, and trained workers are required. A Confined Space Entry Permit is also required with monitoring.

D. CONTROLS

- Establish a regulated area and control access.
- Follow the Heating Plant Standard Operating Procedure (SOP) for boiler cleaning operations.
- Open up the boiler wherever possible for ventilation.
- Use air filtration devices (AFDs) with HEPA filters to clean the air, maintain negative pressure, and draw fresh air into the space. Exhaust the AFD's outdoors.
- All PPE, rags, and other minor waste materials will be left in the boiler to be burned. Do not remove them from the regulated area.

E. AIR MONITORING

Air monitoring is performed quarterly when the PEL is exceeded and every 6 months when between the AL and the PEL. Since we only clean boilers 1-3 times a year, we will need to do air monitoring each time we clean the boilers. If a combination of work practices and engineering controls bring the levels down to below the PEL, less sampling will be needed. The Heating Plant Superintendent will notify EHS as soon as a boiler cleaning date has been

established, but in no case less than a few days ahead of time, that monitoring will be needed. EHS will conduct the air sampling and report back to the Heating Plant Superintendent.

F. PPE

All coal fire boiler entrants shall wear full disposable protective clothing, gloves, and a full-face air-purifying respirator. Hardhats or other PPE shall be used as necessary. All reusable PPE shall be cleaned after use. ALL PPE will be provided to the employee at no cost.

G. TRAINING

All coal fired boiler entrants shall have taken OlympiaTech Inorganic Arsenic Program, Confined Space Entry Training and Respiratory Protection Training. Retraining is required annually thereafter for arsenic and respiratory protection. All entrants shall be adequately trained in whatever tasks must be done inside the space or when OSHA requires it for specific tasks. All training materials will be readily available on the job site to all affected employees.

H. RECORD KEEPING

Exposure records and medical records must be retained for 40 years or the duration of employment plus 20 years, whichever is longer. Workers, former employees, and their designated representatives may have access to the records upon request.

I. SIGNS

The required OSHA Arsenic Warning Sign shall be posted at the entry to the boiler

- RESTRICTED AREA

J. MEDICAL MONITORING

Medical monitoring is only required if the employee is exposed to inorganic arsenic above the action level, regardless of respiratory protection, for at least 30 days per year. Since our employees only clean the boilers a few days per year, a medical program is not required. If at any time an employee feels that they may have symptoms of arsenic related illness or when requested by a physician at Occupational Health, an employee may have a medical evaluation. Recommendations of the physician shall be followed.

K. HOUSEKEEPING

A plastic drop cloth shall be placed immediately outside the area to the boiler access. All dirty clothing and equipment shall be kept on the drop cloth. Employees shall not exit the drop cloth area without HEPA vacuuming them self and removing disposable clothing. Employees shall HEPA vacuum their disposable clothing after egress from the space. Air hoses are not allowed for this purpose. Disposable clothing will be removed and thrown in the boiler. Wash your hands immediately. Remove and clean your respirator. Shower before leaving work for the day. No eating, drinking, applying cosmetics, or smoking is allowed without washing your hands first. Appropriate language shall be put in all specifications for outside contractors that must enter boilers for maintenance or repair. Contractors must comply with OSHA Standards and have an acceptable program for confined space entry into boilers or comply with OlympiaTech program. If they will create dust inside, they must have an arsenic protection program. Any other standards must be met; such as PPE, welding, scaffolding, etc. The

Heating Plant Superintendent is responsible to review contractor qualifications and restrict access to the space if the requirements are not met. Contact EHS or the Facilities Management Safety Representative for assistance as needed.

ASBESTOS PROGRAM

A. PURPOSE AND SCOPE

This policy shall apply to all contractors and their subcontractors working with Asbestos Containing Material of ACM at company project sites. ACM is defined as any material containing greater than 1-% asbestos. Any material suspected to be asbestos must be reported to the owner. The owner will then make a determination as to the asbestos content and make arrangements to have it removed if positive. Regulated asbestos work includes but is not limited to the following:

- Demolition or salvage of structures where ACM is present
- Removal or encapsulation of ACM
- Construction, alteration, repair, maintenance, or renovation of structures, substrates, or portions thereof that contains ACM.
- Installation of ACM products
- Asbestos spill/emergency cleanup
- Transportation, disposal, storage, containment of, and housekeeping activities involving asbestos or products containing asbestos, on the site or location at which the construction activities are performed.

B. RESPONSIBILITIES

- Management
 - Ensure all Asbestos Containing Material is identified and labeled
 - Ensure training is effective for authorized employees
 - Conduct medical surveillance of affected employees
 - Establish engineering controls for all work with asbestos containing material
 - Provide adequate and proper equipment and personal protective gear
 - Ensure proper disposal of all asbestos containing material
- Supervisors
 - Qualified supervisors shall provide effective on-site management during work with asbestos containing material
 - Supervisors will notify OlympiaTech immediately upon discovering damaged asbestos material
- Employees
 - Qualified employees must follow the exact procedures for repair or removal of asbestos containing material, including proper use of containment equipment, clean up equipment and personal protective gear.
 - Unqualified employees are to stay clear of all asbestos work areas and report any damaged asbestos containing material to their supervisor

C. HAZARDS

Asbestos is a common, naturally occurring group of fibrous minerals. Asbestos fibers have been used in a variety of building materials. OlympiaTech takes an aggressive effort to use non-asbestos containing materials in new construction and renovation projects. Generally, most asbestos is found in pipe insulation, doors, textured paints and plasters, structural fireproofing, and floor tiles. Long term exposure to airborne asbestos is necessary for chronic lung disease. Significant and long-term exposure to asbestos from activities that directly disturb asbestos-containing materials can lead to a variety of respiratory diseases, including asbestosis and Mesothelioma. Asbestosis is a non-malignant, irreversible disease resulting in fibrosis of the lung. Asbestos-related cancers tend also to result from substantial long-term exposure.

D. TRAINING

Training is required and to be documented for all employees who perform Class I through IV asbestos work. No untrained workers are to disturb any amount of asbestos. The following are the basic training requirements for the different types of asbestos work:

- Class I asbestos work involves the removal of TSI and surfacing ACM and presumed asbestos-containing material (PACM). Training for Class I work is either 32 hours (asbestos worker), or 40 hours (contractor/supervisor and function as a competent person). An annual 8-hour refresher course is required for both the worker and contractor/supervisor competent person level of training.
- Class II asbestos work involves the removal of ACM which is not thermal system insulation or surfacing material. This includes the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics. Training for Class II work may be the same as for Class I work (asbestos worker or contractor/supervisor) or may be 8 hours of task specific training which includes hands-on training. A separate 12 hour course for flooring removal that complies with the Flooring Industry Settlement Agreement is also offered. An annual refresher is required for all workers.
- Class III asbestos work involves repair and maintenance operations where ACM including TSI and surfacing ACM and PACM may be disturbed. Training for Class III work is 16 hours with an annual 4-hour refresher course.
- Class IV asbestos work involves maintenance and custodial activities during which employees contact but do not disturb ACM and PACM. Initial two-hour asbestos awareness training with an annual refresher is required for all custodial, maintenance, housekeeping and service personnel who work in buildings that contain asbestos.

E. MONITORING

- Asbestos Abatement Air Monitoring

All Class I and II asbestos abatement projects must include the following air monitoring during operations.

- Task specific exposure monitoring (personal sampling) for each task and on at least 25% of the work force.
- Task specific 30 minute short term excursion limit (STEL) personal samples at least once per day, per task.
- Perimeter (clean area) sampling from areas adjacent to the restricted areas.
- If negative air machines are exhausted inside the building, the exhaust must be monitored.
- Final Clearance Monitoring

At the completion of all asbestos removal projects final clearance monitoring is conducted. As part of the final clearance, independent consulting firms are required to conduct a thorough post abatement visual inspection. After a successful visual inspection, 1200 liters of air will be collected. Aggressive final air clearances incorporating the use of a box fan and 1-hp blower motor used to agitate the air must be conducted for all negative pressure enclosure or critical barrier enclosure abatement systems. Passive final air clearances may only be used in abatement systems where a complete enclosure system was not required or used.

F. TIME WEIGHTED AVERAGE

OlympiaTech shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fibers per cubic centimeter of air as an eight hour time weighted average.

- Determinations of employee exposure shall be made from breathing zone air samples that are representative of the 8-hour TWA and 30-minute short-term exposure of each employee.
- OlympiaTech is responsible for setting up initial monitoring for all employees who are exposed to airborne concentrations at or above the TWA permissible exposure limits.
- Additional monitoring shall take place and a written program developed whenever there has been a change in the production, process, control equipment, personnel or work practices that may result in new or additional exposures above the TWA permissible exposure limit and/or excursion limit or when OlympiaTech has any reason to suspect that a change may result in new or additional exposure above the PEL.
- Employee monitoring shall be in accordance with 1910.1001 Appendix A.

G. REGULATED AREAS

- Regulated areas shall be demarcated from the rest of the workplace in any manner that minimizes the number of persons who will be exposed to asbestos.
- Only authorized persons shall be allowed to enter area.
- If employees working immediately adjacent to a Class I asbestos jobs are exposed to asbestos due to the inadequate containment of such job, their employer shall either remove the employees from the area until the enclosure breach is repaired; or perform an initial exposure assessment pursuant to 1926.1101(f).

H. CONTROLS

- It is the responsibility of OlympiaTech to institute engineering controls to bring employee exposure below the TWA.
- Each employee entering a regulated area shall be furnished with but limited to and be required to use full face respirator with appropriate cartridges, tyvek suit with head covering, and gloves.
- Employees will be prohibited from eating, drinking, or chewing tobacco in designated areas.
- All hand-operated and power-operated tools which would produce or release fibers of asbestos shall be provided with local exhaust ventilation systems.
- ACM shall be worked in a wet state sufficient to prevent the emission of airborne fibers so as to expose employees to levels in excess of the TWA.
- ACM shall not be removed from the designated area without being either wetted, or enclosed, or ventilated so as to prevent effectively the release of airborne fibers.
- Compressed air shall not be used in the removal of ACM. Shower facilities shall be provided for employees who work in areas above the TWA.
- No clothing wore in designated areas is to be brought off site to be laundered.
- Signs – Each regulated area must be posted with the following words:
 - DANGER
 - ASBESTOS
 - CANCER AND LUNG DISEASE HAZARD
 - AUTHORIZED PERSONNEL ONLY
 - RESPIRATORS AND PROTECTIVE CLOTHING THIS AREA
- Warning labels shall be placed on all debris and raw materials that are in or leave designated areas.
- The training provided for all employees that work with ACM:
- Health & Safety Policy and Procedures Manual
 - Training shall be provided before initial assignment and at east annually.
 - Training to be in accordance with 1910.1001(j)(7)(iii).

I. RESPIRATORY

All OlympiaTech employees must be provided with proper protective clothing and respirators when assigned to work in Class I-III asbestos work or Class IV work that takes place in a regulated area.

J. HOUSEKEEPING

All surfaces shall be maintained as free as practicable of ACM waste, debris, and accompanying dust. Surfaces contaminated with asbestos may not be cleaned using compressed air. Do not drill holes, hammer nails into, hang objects from, touch with curtains, or move furniture that damages ACM or PACM. Waste, debris, and accompanying surface dust in areas containing accessible and/or visibly deteriorated ACM, shall not be dusted, swept, shoveled dry, or vacuumed without using a HEPA filter. All vinyl and asphalt flooring

should be treated as ACM unless evidence exists to prove otherwise. The following restrictions exist for the care of ACM flooring: no sanding is permitted, stripping should be conducted using low abrasion pads at speeds lower than 300 rpm with wet methods, and burnishing or dry buffing may be performed only on flooring which has sufficient finish so the pad doesn't contact the flooring material. Broken ACM floor tiles should only be removed by properly trained personnel.

ASSURED EQUIPMENT GROUNDING PROGRAM

A. PURPOSE AND SCOPE

This program outlines safe work practices to follow to protect workers on construction sites from all electrical injuries resulting from possible equipment malfunctions, improper grounding, and defective electrical tools. It is the policy of OlympiaTech that our employees follow safe work practices when performing work operations using extension cord sets and receptacles that are not part of a building or structure, as well as when using equipment connected by a cord and plug.

B. RESPONSIBILITIES

Safety Manager

The Safety Manager will

- Have the overall responsibility for implementing this safety and health program. OlympiaTech employees should review a copy of this program. Copies of this program will be available at the job site for inspection.

Employees

Employees will

- Not be permitted to use any equipment which does not meet the requirements of this program.
- Ground fault circuit interrupters (GFCI's) will be used at OlympiaTech in addition to an Assured Ground Fault Program on construction sites.

C. REQUIREMENTS

- Ground Fault Protection
 - GFCI's shall be used on all 120-volt, single-phase, 15- and 20- ampere receptacle outlets which are not part of the permanent wiring of any building and are used by OlympiaTech employees. GFCI's are not required on receptacles on a two-wire single-phase portable or vehicle-mounted generator rated not more than 5kW where the circuit conductors are not part of the generator frame. All other grounded surfaces need not be protected with GFCI's.
- Assured Equipment Grounding
 - In addition to the use of GFCI's, OlympiaTech employees shall implement and follow assured equipment grounding, which is a testing and identification procedure to verify that electrical equipment is safe to operate in regards to the electrical hazards. Each GFCI, cord set, attachment, cap, plug and receptacle cord sets, and any equipment connected by cord and plug must be visually inspected daily for external defects.
- Daily Visual Inspection
 - OlympiaTech employees will be instructed that each cord set, attachment cap, plug and receptacle of the cord set, and any equipment connected by cords and plugs, must be visually inspected before each day's use for external defects, such

as deformed or missing pins, insulation damage, and current test verification code numbers. Any indication of possible internal damage must be checked as well. Damaged equipment shall be tagged “DO NOT USE” and taken out of service until the required repairs and tests have been conducted. Equipment that has not been tested within 3 months must not be used.

- Test Procedure
- GFCI's, cord sets, receptacles which are not part of the permanent wiring of a structure, and cord and plug connected equipment required to be grounded shall all be tested. The tests shall be performed:
 - Before first use;
 - Before equipment is returned to service;
 - Before equipment is used after any incident in which it was reasonable to suspect it became damaged; and
 - At intervals not to exceed 3 months, except cord sets and receptacles which are fixed and not exposed to damage should be tested at intervals not to exceed 6 months
- The tests are as follows:
 - All equipment-grounding conductors shall be tested for continuity and shall be electrically continuous.
 - Each plug and attachment plug shall be tested for the correct attachment of the grounding conductor.
 - The grounding conductor shall be connected to its proper terminal.
 - The method to determine the condition of the affected equipment is as follows:
 - Receptacle: use receptacle tested to determine correct connection to terminals
 - Cord Sets: first plug the cord set into a properly wired receptacle, which has been tested as above. Then, plug receptacle tester into the female cord connector of the cord set to determine both continuity of grounding conductor and correct connections to terminals.
 - Cord and Plug Connected Equipment use continuity tester. Connect or touch one terminal of continuity tester to the metal frame of the equipment or tool and the other terminal to the grounding prong of the attachment cap plug at the end of the cord. An audible or visual signal of the test indicates that there is continuity of the grounding conductor.
 - Any equipment which does not pass the tests will not be available for use by OlympiaTech employees. Equipment that fails the tests shall be tagged and marked out-of-service by reading “DO NOT USE”. The equipment should be removed from service until it has been repaired and has successfully passed the re-tests.
 - It shall be the site Foreman's responsibility to ensure that the equipment under their control has been tested. The Foreman does have the ability of performing the respective tests in the field using appropriate testing equipment. The Safety Manager or his designee will perform random safety inspections to ensure compliance with this program.

D. MODEL RECORD AND COLOR KEY CODE

TEST RECORD	
Cord	
Location	
Use	
Date Tested	
Color Used	
Qualified Person	
Notes:	

MONTH	COLOR
January	White
February	White Plus Yellow
March	White Plus Blue
April	Green
May	Green Plus Yellow
June	Green Plus Blue
July	Red
August	Red Plus Yellow
September	Red Plus Blue
October	Orange
November	Orange Plus Yellow

December	Orange Plus Blue

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BENZENE AWARENESS PROGRAM

A. PURPOSE AND SCOPE

The purpose of this Benzene Awareness Program is to define work practices, administrative procedures and engineering controls to protect OlympiaTech employees exposed to benzene concentrations above the OSHA action level. This plan shall be implemented and kept current by the Safety Manager as required to reflect the most recent exposure monitoring data.

This program covers all OlympiaTech employees who may be exposed to benzene in the course of completing job duties. This written plan shall be made available to the Assistant Secretary, the Director, affected OlympiaTech employees and designated employee representatives. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers OlympiaTech employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent. OlympiaTech employees will be aware of the provisions of site specific contingency/emergency plans by either OlympiaTech or of a facility owner.

B. RESPONSIBILITIES

Manager or Designee

- Ensure personnel are aware of work that has the potential of exposure to benzene.
- Ensure individuals responsible for monitoring areas of exposure are properly trained.
- Ensure personnel receive documented medical surveillance exams.
- Ensure that emergency exams are performed if an overexposure or suspected overexposure occurs.

Supervisors

- Ensure employees have the appropriate personal protective equipment (PPE) and are properly trained in its use and care.
- Ensure employees comply with the benzene control program.

Safety Manager

- Develop and implement project/task specific benzene control procedures prior to the start of activities that may include exposure to benzene. OlympiaTech will be aware of an owner's contingency plan provisions and all OlympiaTech employees must be informed where benzene is used in host facility and aware of additional plant safety rules. In coordination with the Manager, develop and implement project/task specific benzene control procedures prior to the start of activities that may include exposure to benzene.
- Coordinate monitoring activities, ensuring monitoring equipment is in proper working order and, as necessary, modifying the benzene control procedures to reflect exposure monitoring data.
- Maintain the benzene control program, notify management of any regulatory changes and ensure compliance with regulatory, client and corporate requirements.
- Coordinate training activities.

- Coordinate the medical surveillance program, including maintenance of medical records and administration of exams.
- Ensure, that due to the flammability of benzene, fire extinguishers shall always be readily available

Employees

- Comply with the benzene control program.
- Know where benzene is used at OlympiaTech or client facilities and follow any of additional plant safety rules required by the client.
- Comply with the medical surveillance program and attend examinations as required.
- Maintain respiratory protection equipment in good working order and notify the supervisor or Safety

Representative

- Review material safety data sheets or consult with the supervisor to identify any container with benzene containing material.
- Not smoke in prohibited areas where benzene is present.
- Report exposures resulting in any symptoms immediately.

C. LOCATION

Locations where OlympiaTech employees may be exposed to benzene may include, but not limited to: petroleum refining sites, tank gauging (tanks at producing, pipeline & refining operations) and field maintenance operations.

D. DEFINITIONS

- Action Level – means an airborne concentration of benzene of 0.5 ppm calculated as an 8-hour time-weighted average.
- Benzene – a toxic, colorless liquid or gaseous material. Benzene has an aromatic odor, is not soluble in water and is flammable.
- Employee exposure – exposure to airborne benzene that would occur if the employee were not using respiratory protective equipment.

E. HEALTH EFFECTS

Short-term overexposure may cause irritation of eyes, nose and skin; breathlessness, irritability, euphoria, headache, dizziness or nausea. Long term effects may result in blood disorders such as leukemia and anemia

F. PROCEDURE

- Permissible Exposure Limits
- The time-weighted average limit (TWA) for benzene is: 8-hour TWA 1 ppm / 12-hour TWA 0.67 ppm
- The short-term exposure limit (STEL) for benzene is 5 ppm.

G. REGULATED AREAS

- OlympiaTech shall establish regulated areas wherever airborne concentration of benzene exceeds or can reasonably be expected to exceed the PEL or STEL.
- OlympiaTech will control access to regulated areas and limit access to authorized personnel.
- Fire extinguishers will be readily available for workers in any area that benzene is used or stored
- The following signage shall be posted in all regulated areas when the potential exists for benzene vapors to be in excess of the PEL:
 - DANGER – BENZENE REGULATED AREA CANCER CAUSING AGENT FLAMMABLE
 - NO SMOKING AUTHORIZED
 - PERSONNEL ONLY RESPIRATOR REQUIRED

H. METHODS OF COMPLIANCE

- The benzene control program shall be written and implemented to comply with OSHA regulation 29 CFR 1910.1028 (Benzene).
- OlympiaTech shall establish and implement a written program to reduce employee exposure to or below the PEL primarily by means of engineering and work practice controls to ensure compliance with the benzene control program and federal and state requirements.

I. EXPOSURE MONITORING

- Exposure monitoring shall be performed for the 8-hour and 12-hour TWAs or for the 15 minute STEL exposure when:
 - Regulated areas are established
 - An emergency occurs that could require a regulated area
 - A change in the production, process, control equipment, personnel or work practices may result in new or additional exposure to benzene
 - Cleanup of a spill, leak repair, or rupture occurs
- If the monitoring required reveals employee exposure at or above the action level but at or below the TWA OlympiaTech shall repeat the monitoring for each employee at least every year.
- If the initial monitoring reveals employee exposure to be below the action level OlympiaTech may discontinue the monitoring.
- If the monitoring reveals that employee exposures, as indicated by at least two consecutive measurements taken at least 7 days apart, are below the action level OlympiaTech may discontinue to monitor.
- Direct reading detection instruments (Drager CMS is recommended) will be used where benzene vapors may be present in work areas not previously monitored.

- Personal monitoring will be performed by use of vapor monitoring badges following manufacturer requirements. All samples shall be analyzed at an AIHA (American Industrial Hygiene Association) certified laboratory.

J. MEDICAL SURVEILLANCE

- Baseline and annual medical exams shall be provided to OlympiaTech employees that may work or are anticipated to participate in operations more than 10 times per year or may work in areas where benzene exposures may exceed the PEL over 30 days per year.
- OlympiaTech, Inc shall make available a medical surveillance program for employees who are or may be exposed to benzene at or above the action level 30 or more days per year; for employees who are or may be exposed to benzene at or above the PELs 10 or more days per year; for employees who have been exposed to more than 10 ppm of benzene for 30 or more days in a year prior to the effective date of the standard when employed by their current employer.
- Notification of monitoring results shall be provided to employees in writing within 15 working days of receipt of results.

K. PERSONAL PROTECTIVE EQUIPMENT

- PPE will be selected on the basis of its ability to prevent absorption, inhalation and ingestion.
- PPE will reflect the needs of the employee based on work conditions, amount and duration of exposure and other known environmental factors but shall contain as a minimum; boots, proper eye protection, gloves, sleeves, aprons and others as determined.
- PPE shall be provided and worn when appropriate to prevent eye contact and limit dermal exposure to liquid benzene. PPE must meet the requirements of 29 CFR 1910.133 and provided at no cost to the employees.

L. RESPIRATORY PROTECTION

- A respiratory protection program shall be established in accordance with 29 CFR 1910.134. Respiratory protection is required:
 - During the time period necessary to implement engineering controls or work practices.
 - When engineering and work practices are not feasible.
 - In emergencies.
- Approved respirators shall be selected according to airborne concentrations of benzene or condition of use.
 - 0 to 0.67 ppm – no respirator required
 - 0.67 to 6.7 ppm – half-mask respirator with OV cartridges
 - 6.7 to 33 ppm – full-face respirator with OV cartridges

- Greater than 33 ppm – Due to OlympiaTech policy of not permitting SCBA no OlympiaTech employee shall enter a space containing more than 33 ppm.

M. RECORDKEEPING

- Medical surveillance records shall be maintained for 30 years after termination of employment
- Exposure monitoring records shall be maintained for 30 years after completion of the project
- Exposure and medical monitoring records shall be made available to affected OlympiaTech employees or their representatives and to OSHA upon request

N. COMMUNICATION OF BENZENE HAZARDS

- Signs and labels shall be posted at entrances of regulated areas
- The benzene control program shall be updated by OlympiaTech Safety Manager
- Project site specific contingency and emergency procedures shall be updated by the Safety Manager and made available to project staff prior to beginning work at the specific site.

BLOODBORNE PATHOGENS PROGRAM

A. PURPOSE AND SCOPE

The goal of the following Exposure Control Plan (ECP) is to eliminate or minimize occupational exposures to Bloodborne pathogens.

The basis of this Plan is the OSHA Bloodborne Pathogens Standard, 29 CFR 1910.1030. Although this is a General Industry standard, it can be applied to construction activities where exposure may occur, such as protection for first-aid responders. As required by OSHA in 1926.50 Medical services and first aid and consistent with the direction in NFPA 70E Standard for Electrical Safety in the Workplace, first-aid responders will be available on all company jobsites. This program will therefore provide protection for OlympiaTech employees against bloodborne pathogens

B. EMPLOYEE EXPOSURE DETERMINATION

Occupational exposure to blood and bodily fluids is limited to our designated first-aid responders or OlympiaTech employees engaged in special duties where that potential may exist. However, any employee who has been exposed to blood or bodily fluids should immediately report it to their supervisor to determine the appropriate action regarding possible exposure to bloodborne pathogens.

Our facility may decide to offer hepatitis B vaccination to the first-aid provider after an exposure has occurred or offer pre-exposure vaccination.

C. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Provide a copy of the Plan to employees free of charge and within 15 days of the request
- Maintain reports of any exposure incident. The report will include the first-aid responder's name, the date, time and description of the exposure incident.
- Train first-aid providers on the Bloodborne Pathogen requirements including the specifics required for reporting procedures.
- Ensure that any first-aid responder requesting the Hepatitis B vaccine series after an exposure incident receives it as soon as possible, but no later than 24 hours after the incident.
- Universal precautions will be observed under circumstances in which differential between body fluids is difficult or impossible. All body fluids will be considered potentially infectious.
- Provide training, review and update the Exposure Control Plan, (ECP) annually, or as needed to include any new or modified tasks and procedures that affect occupational exposure. The update will include any new or revised employee positions with occupational exposure.

First-Aid Responders

First-Aid Responders will:

- Be trained on the Bloodborne Pathogen requirements by or under the direction of the Safety Director.
- Report all first aid incidents where blood or potentially infectious materials are present to the Safety Director before the end of the work shift.
- Use appropriate Personal Protective Equipment (PPE) when attending to an exposure incident.

Health Care Provider

The Health Care Provider (HCP) will:

- Conduct post exposure examinations and administer vaccinations as needed.

Employees

All employees will:

- Abide by all engineering controls and safe work practices in place to minimize potential exposure. This includes, but is not limited to, hand washing and use of the appropriate PPE.

D. ENGINEERING CONTROLS AND WORK PRACTICES

- Engineering controls and work practice controls will be used to prevent or minimize exposure. Hand washing facilities are available at all job sites. OlympiaTech employees will wash with antibacterial cleansers and use appropriate disinfectant means after administering first-aid and follow all standard precautions. All equipment will be decontaminated or discarded in appropriate containers

E. PERSONAL PROTECTIVE EQUIPMENT

- The appropriate PPE will be provided by OlympiaTech to the employees at no cost.
- First-aid responders will use PPE appropriate for administering the first-aid required. All jobsite first-aid kits will contain:
 - Gloves
 - Eye protection
 - Resuscitation bags and mouthpieces
 - Face shield or masks

F. HOUSEKEEPING

- In the event of a first-aid incident or other exposure covered by this Plan, the first-aid responders exposed will take precautions to decontaminate work surfaces, tools and equipment. PPE will be used during cleanup. Mechanical means such as tongs, forceps or a brush and a dust pan will be used to pick up contaminated broken glassware. The

waste will be treated as regulated waste and disposed of in sealed and labeled or color-coded containers. When storing, handling, transporting or shipping regulated waste, it will be in containers that are constructed to prevent leakage. The waste will be discarded according to federal, state and local regulations.

- In the event of a first-aid incident in which the first-aid responder's clothes become contaminated, the following actions will be taken:
- Contaminated laundry will be handled as little as possible and with a minimum of agitation. Appropriate PPE will be worn when handling contaminated laundry.
- Contaminated laundry will be placed in color-coded bags at its location of use and taken by a commercial launderer. The launderer will be given the appropriate warnings.

Labeling

- Biohazard warning labels will be placed on all containers for wastes which may be contaminated with blood or body fluids, or red bags will be used as required.

G. TRAINING

- All designated first-aid responders or other OlympiaTech employees covered by this Plan will receive training conducted by or under the direction of the Safety Director. The training program will cover, at a minimum, the following elements:
 - A copy and explanation of the standard
 - Causes, control and symptoms of Bloodborne pathogens
 - Modes of transmission of Bloodborne pathogens
 - The Exposure Control Plan, (ECP) and a way to obtain a copy
 - Methods to recognize tasks that risk exposure and other activities that may involve exposure to blood
 - Use and limitations of Engineering Controls, Work

Practices and PPE

- PPE types, use, location, removal, handling, decontamination, disposal and basis for selection
- Availability procedures for the Hepatitis B Vaccine and the availability at no cost. (Training will be given prior to vaccination on its safety, effectiveness, benefits, and method of administration.)
- Emergency procedures for blood and other potentially infectious materials
- Exposure incident procedures
- Post-exposure evaluation and follow-up
- Signs, labels and/or color coding
- Question and answer session

H. POST EXPOSURE EVALUATION AND FOLLOW-UP

The Safety Director is to be contacted immediately following an exposure incident. A confidential medical evaluation and follow-up will be conducted.

The follow-up will include:

- Documentation of the routes of exposure and how the exposure occurred.
- Identification and documentation of the source employee, unless infeasible or prohibited by State or local law.
- Obtaining consent from the source employee and testing the blood, documenting these blood test results.
- If the source employee is known to be infected, testing need not be repeated.
- Providing the exposed employee with the source individual's test results and information about applicable disclosure laws and regulations concerning the source individual's identity and infectious status.
- Obtaining consent from the exposed employee, collecting blood as soon as is feasible after the exposure incident and test blood for HBV and HIV serological status.
- If the employee does not give consent for HIV serological testing during the collection of blood for baseline testing, the baseline blood sample will be preserved for at least 90 days.
- Counseling on post exposure protocols to include precautionary measures to prevent further transmission of any bloodborne pathogen and support from the Employee Assistance Program (EAP)

The circumstances of exposure incidents will be reviewed to determine if procedures, protocols and/or training need to be revised.

I. HEALTHCARE PROFESSIONALS

Healthcare professionals (HCPs) responsible for employee's HB vaccination, post-exposure evaluation and follow-up will be given a copy of the OSHA Blood-borne Standard. The healthcare professional evaluating an employee after an exposure incident will also receive:

- A description of the exposed employee's job duties relevant to the exposure incident
- Routes and circumstances of exposure
- Results of the source employee's blood test, if available
- Relevant employee medical records, including vaccination status.

J. HEALTHCARE PROFESSIONAL'S WRITTEN OPINION

The designated Healthcare Professional will provide the exposed employee with a copy of the evaluating Healthcare Professional's written opinion within 15 days after completion of the evaluation.

The written opinion for post-exposure evaluation and follow-up will be limited to whether or not the exposed employee has been informed of the results of the medical evaluation and any

medical conditions which may require further evaluation and treatment. For HB vaccinations, the opinion will be limited to whether the employee required or received the vaccine. All other diagnoses must remain confidential and not be included in the written report to the employer.

K. RECORDKEEPING

Medical Records

Medical records are maintained for each employee with exposure in accordance with 29 CFR 1926.33 or 1910.20. In addition to the requirements of this standard, the medical records will include:

- The name and social security number of the exposed employee
- A copy of the exposed employee's Hepatitis B vaccination records and any medical records relative to the employee's ability to receive vaccinations

Medical Evaluations Performed By:

- A copy of all results of examinations, medical testing, and follow-up procedures as required
- A copy of all HCP's written opinion(s) as required by the standard

Employee medical records will be kept confidential and will not be disclosed or reported without the employee's express written consent except as required by the standard or by law.

Employee medical records shall be maintained for at least the duration of employment plus 30 years.

Employee medical records shall be provided (within 15 working days) upon request of the employee or to anyone having written consent of the employee.

Training Records

Bloodborne pathogen training records will be maintained by the Safety Director at a designated location. Training Records will be kept for a duration of no less than 3 years.

Transfer of Records

If OlympiaTech ceases to do business and there is not a successive employer, the employer shall notify the Director of the National Institute for Occupational Safety and Health (NIOSH) at least 3 months prior to a scheduled records disposal, and prepare to transmit them to the Director of NIOSH.

L. CREDENTIAL INFORMATION

- Designated First-Aid Providers:
- Medical Evaluations Performed By:
- Designated Health Care Professional:
- Employee Assistance Program Manager:

CADMIUM

A. PURPOSE AND SCOPE

This cadmium program applies to all OlympiaTech employees who may be exposed to cadmium at or above the prescribed action level of 2.5 micrograms per cubic meter of air averaged over any eight-hour period. (2.5ug/m³). The permissible exposure limit or PEL for cadmium 5 micrograms per cubic meter of air, averaged over any 8 hour period. (5ug/m³).

OlympiaTech is not a user of cadmium. However, this material may be found at our client's facilities and provided to all employees. OlympiaTech should request copies of any plan or document indicating the location of regulated areas. Affected employees and their representatives will have access to cadmium written procedures. All employees must be trained to the hazards of cadmium exposure, signs, symptoms, necessary protective measures and the location of regulated areas. Employees will be provided with annual training.

B. RESPONSIBILITIES

OlympiaTech is responsible for implementation, enforcement and periodic review of this plan.

- Supervisors
 - All supervisors are responsible for understanding this plan and implementation of the plan in their area.
- Employees
 - All affected employees are also responsible for following the requirements outlined here as they apply to their job. The term "employee" as used in this plan refers only to those who are exposed to greater than the PEL.

C. EXPOSURE MONITORING

When tasks are presumed to generate cadmium exposures greater than the permissible exposure limit (PEL) of 5 ug/m³ of air averaged over an eight hour period, we treat affected employees as if they were exposed above the PEL and implement procedures to protect workers until we perform an employee exposure assessment and document that an employee's cadmium exposure is not above the PEL. Tasks estimated to generate a TWA of 5 ug/m³ of air include:

- Manual demolition, manual scraping, manual sanding, heat gun applications, and power tool cleaning with dust collection systems where cadmium coatings or contaminants are present.
- Emergency operations involving cadmium or cadmium burning.
- Power tool cleaning without dust collection systems where cadmium contamination is present.
- Cleanup activities where dry expendable abrasives are used, and abrasive blasting enclosure movement and removal where cadmium containing coatings or contaminants is present. Based on historical data from previous cadmium jobs, we will take measures as recommended in 29 CFR 1926.62 to protect our employees. These measures include but are not limited to:

- Appropriate respiratory protection (protection factor of 10, 25, 5, or 100 depending on the tasks involved and the estimated exposures).
- Proper personal protective clothing and equipment
- Change areas
- Hand washing facilities
- Biological monitoring
- Training

- Initial Determination

We assess each new project to determine if employees may be exposed to cadmium at or above the action level of 2.5 ug/m³ of air as an eight hour TWA. This initial determination can be based on:

- Employee exposure monitoring.
- Objective data demonstrating that under expected conditions, specific processes, operations, or activities involving cadmium cannot result in employee exposure to cadmium at or above the action level.
- Previous monitoring for cadmium exposures within the last 12 months during work operations conducted under workplace conditions closely resembling the processes, types of material, control methods, work practices, and environmental conditions used and prevailing in your operations. We base initial determinations on employee exposure data. Our employee exposure monitoring data includes:
 - Information, observations, or calculations which would indicate employee exposure to cadmium.
 - Previous measurements of airborne cadmium.
 - Any employee complaints of symptoms which may be attributable to exposure to cadmium.

- Initial Determination Results

If our initial determination reveals employee exposure to be below the action level, we will conduct periodic air monitoring during operations to confirm that airborne cadmium levels are below the action level. If our initial determination reveals employee exposures to be at the action level but at or below the PEL, we will conduct air monitoring and personal air sampling of 25% of the represented workforce. If our initial determination reveals that employee's exposures will be above the PEL, attempts will be made through administrative and engineering controls to reduce exposures below the PEL. If this should fail to reduce the exposure level, employees shall wear the appropriate level of PPE necessary to reduce exposures below the PEL.

- Additional Exposure Assessments

If changes in equipment, process, control, personnel or tasks occur after initial determination, we reevaluate to determine if employees are exposed to higher concentrations of cadmium. We will conduct periodic air monitoring of the work site to

determine if changes occur in the exposure levels. This program will also be reviewed at that time.

- Employee Notification

Within five working days of completing an exposure assessment we notify each employee in writing of his/her assessment results. Our procedure for this notification process is that we will post all air monitoring results for employees to review within five working days.

- Methods of Compliance

This program is our written strategy and schedule for protecting our workers from cadmium exposure. It incorporates all relevant information that relates to this goal, so that we can determine whether we appropriately analyzed problems and solutions relating to cadmium exposure. This program is intended to reduce employee exposure to at or below the PEL. When all feasible engineering and work practice controls which can be instituted are not sufficient to reduce employee exposure to acceptable levels, appropriate respiratory protection will be provided to supplement such controls. We have implemented engineering and work practices to include, but are not limited to; wet methods, negative air systems, necessary PPE. Additionally, housekeeping practices that will be followed include:

- Vacuuming floors and other surfaces where cadmium accumulates to minimize the likelihood of cadmium becoming airborne.
- Shoveling or wet sweeping (permitted only where vacuuming or other equally effective methods have been tried and found ineffective).
- Use of HEPA filters on vacuum cleaners.
- Emptying vacuums so that cadmium is not reintroduced into the workplace.

The written work practices shall be utilized to control exposure to cadmium during normal operations and maintenance activities involving maintenance of specific tools and engineering controls equipment, such as ventilation machines. Our jobs are typically multi-employer worksites. The contractor must supply this organization copy of cadmium training certificates for all employees who may be exposed to cadmium from cadmium abatement activities. All contractor employees shall receive a site safety orientation to include the hazards of cadmium of the site prior to beginning work. We review and update our written plan every six months to reflect the current status of the program.

D. RESPIRATORY PROTECTION

As our engineering controls and work practices are generally sufficient to reduce exposures to at or below the PEL without the use of respirators, unless an employee specifically requests a respirator, respiratory protection will not be routinely used on our worksites. We provide NIOSH approved respirators, recommended in Table 1 of 29 CFR 1926.1127, to employees who request them. Any employee may ask his supervisor for a respirator and one will be provided upon request in accordance with company policy.

E. PPE

We provide personal protective equipment as interim protection for employees during exposure assessment, since our employees may be exposed to cadmium above the PEL without regard to the use of respirators, or exposed to cadmium compounds which may cause skin or eye irritation. We provide protective clothing and equipment at no cost to our employees. The types of protective clothing provided by OlympiaTech shall include, but is not limited to:

- Cotton Tyvek coveralls, with hood; Saranex coated Tyvek coveralls with hood
- Latex gloves with taped interfaces
- Safety glasses
- Hardhats

This equipment is considered disposable, and is to be disposed of at the job site. We will replace or repair any damaged equipment providing the employee notifies his supervisor of the damage to his protective clothing.

F. HYGIENE

We provide hygiene facilities for our workers and assure they follow good hygiene practices. We prohibit smoking, eating, applying cosmetics, and the presence of tobacco products, foodstuffs, or cosmetics in all work areas where employees are exposed to cadmium above the PEL. We make sure worker will comply with these requirements through regular inspections by supervisory personnel. Employees who fail to comply will be subject to disciplinary actions as prescribed by company policy.

G. MEDICAL SURVEILLANCE

OlympiaTech supports the practices necessary for early detection of cadmium exposure. The medical surveillance program supplements the primary goals of the cadmium exposure control program of preventing disease through elimination or reduction of airborne concentrations of cadmium, and sources of ingestion. The medical surveillance provisions incorporate both initial and ongoing medical surveillance. We provide initial medical surveillance to employees who are occupationally exposed to airborne cadmium levels greater than the action level 30 days a year or above the PEL for greater than 10 days a year. This monitoring consists of visits with the physician to include a detailed occupational history and laboratory analysis per 1910.1027(l), as required. To ensure appropriate medical surveillance is performed, we provide to the physician and/or representative copies of the regulation and appendices, a description of the employees duties, a list of the personal protective equipment worn by the employee, and past exposure assessment data. All medical examinations, procedures, and blood Cadmium level sampling/analysis shall be conducted by licensed healthcare practitioners and/or physicians. Our medical surveillance program shall meet the requirements of 29 CFR 1910.1028(l).

H. MEDICAL REMOVAL PROTECTION

We remove employees from work who have exposures to cadmium at or above the action level each time a periodic and a follow-up blood sample indicates that medical removal is necessary as required by 1926.1127 (l)(3),(4), & (6). We remove employees from work who have exposures to cadmium at or above the action level when a health care professional determines

that they have medical conditions which, when exposed to cadmium, places them at greater risk for those health problems. Employees who are removed from work will receive all wages, benefits, for a period of 18 months without loss of seniority or promotion opportunities. OlympiaTech reserves the right to place an employee in a position of equal responsibility, where the employee will not be exposed occupationally to cadmium.

I. EMPLOYEE EDUCATION AND TRAINING

Employees can do much to protect themselves from the risks of occupational cadmium exposure if they know about them. In our training programs we inform employees of the specific hazards associated with their work environment, protective measures which can be taken, and their rights under the standard (Including the contents of 29 CFR 1926.1127 and appendices A & B) prior to the time of initial assignment. All employees working in areas with airborne cadmium levels above the PEL are required to possess appropriate training certifications. Training certifications will detail identity of employee trained, signature of qualified trainer, and the date of training. Training records will be retained at the corporate office for a period of no less than 1 year.

J. SIGNS

Because exposure to cadmium is a serious health hazard, we post signs that warn employees of cadmium hazards and of the possible need to use respirators and other protective equipment in the area. Appropriate cadmium warning signs will be provided at all entrances and exits to the work area. Additionally, employees will be instructed as to the meaning of the various signs at the worksite during training.

K. RECORD KEEPING

We maintain accurate biological and environmental monitoring records of employee exposures to potentially toxic materials, including cadmium. We allow employees unlimited access to their records. We include the following exposure monitoring records:

- Exposure assessment
- Medical surveillance results
- Medical removals
- Objective data for exemption from requirement for initial monitoring
- Procedures for making records available
- Procedures for transfer of records

L. OBSERVATION AND MONITORING

We provide our employees or their representatives the opportunity to observe exposure monitoring of toxic materials or harmful physical agents. When an observer is present, supervisory personnel shall ensure that the observer is provided with the following:

- An explanation of the measurement procedures being used.
- Allowing the observation of all steps related to the measurement procedures.
- The dissemination of the results when returned by the laboratory.

- Providing the observer with the proper personal protective equipment
- Assuring that observers comply with all applicable safety and health procedures.

M. EMERGENCY SITUATIONS

In emergency situations, which involve a substantial release of cadmium, EMA shall ensure workers are protected by following all aspects of this program. This will include limiting access to authorized employees, provision and use of PPE, exposure monitoring, medical surveillance, hygiene facilities, work practices, fugitive emission controls, and proper disposal. A site specific safety and health plan shall be developed in accordance with our Hazwoper program included in our written Safety & Health Manual.

CONFINED SPACE PROGRAM

A. PURPOSE AND SCOPE

It is the policy of OlympiaTech that the first consideration in the performance of work shall be the protection of the safety and health of all employees. OlympiaTech has developed this Confined Space Entry Program to ensure that all employees receive adequate training and information relevant to the possible hazards that may be involved when entering and working in enclosed or confined spaces. The training conducted will be documented. OlympiaTech will review the confined space program within one year and revise the program as needed. The Scope of this program covers Confined Spaces in Construction, 29 CFR 1926.1201-.1213. The following program outlines how we will accomplish this objective.

B. RESPONSIBILITIES

The Controlling Contractor

- Debrief each entity that entered a permit space regarding the permit space program followed and any hazards confronted or created in the permit space during entry operations.
- Coordinate entry operations when more than one entity performs permit space entry at the same time or when entry is performed at the same time that any activities that could foreseeably result in a hazard in the permit space are performed.
- Coordinate entry operations when employees of more than one employer are working simultaneously in a permit space or elsewhere on the worksite so that employees of one employer do not endanger employees of any other employer.

The Entry Employer

The Entry Employer will:

- Monitor the effectiveness of the program.
- Provide atmospheric testing and equipment as needed.
- Provide personal protective equipment as needed.
- Provide training to affected employees and supervisors.
- Provide technical assistance as needed.
- Preview and update the program on at least an annual basis or as needed.

Responsible Person

Responsible Person will:

- Be responsible for managing the Confined Space Program
- Ensure that a list of confined spaces at all OlympiaTech worksites is maintained.
- Ensure that canceled permits are reviewed for lessons learned.
- Ensure training of personnel is conducted and documented.

- Coordinate with outside responders.
- Ensure that equipment is in compliance with standards.
- Ensure that the Responsible Person in charge of confined space work shall
- Ensure requirements for entry have been completed before entry is authorized.
- Ensure confined space monitoring is performed by personnel qualified and trained in confined space entry procedures
- Ensure a list of monitoring equipment and personnel qualified to operate the equipment is maintained by the Safety and Occupational Health Office.
- Ensure that the rescue team has simulated a rescue in a confined space within the past twelve (12) months.
- Know the hazards that may be faced during entry, including the mode (how the contaminant gets into the body), signs or symptoms, and consequences of exposure.
- Fill out a permit.
- Determine the entry requirements.
- Require a permit review and signature from the authorized Entry Supervisor.
- Notify all involved employees of the permit requirements.
- Post the permit in a conspicuous location near the job.
- Renew the permit or have it reissued as needed (a new permit is required every shift).
- Determine the number of Attendants required to perform the work.
- Ensure all Attendant(s) know how to communicate with entrants and how to obtain assistance.
- Post any required barriers and signs.
- Remain alert to changing conditions that might affect the conditions of the permits (i.e., require additional atmospheric monitoring or changes in personal protective equipment).
- Change and reissue the permit, or issue a new permit as necessary.
- Ensure periodic atmospheric monitoring is done according to permit requirements.
- Ensure that personnel doing the work and all support personnel adhere to permit requirements.
- Ensure the permit is canceled with the work is done.
- Ensure the confined space is safely closed and all workers are cleared from the area.

Entry Supervisors

Entry Supervisors will:

- Be qualified and authorized to approve confined space entry permits. Determining if conditions are acceptable for entry by determining the hazards
- Authorizing entry and overseeing entry operations.

- Terminating entry procedures as required.
- Serving as an Attendant, as long as the person is trained and equipped appropriately for that role.
- Ensuring measures are in place to keep unauthorized personnel clear of the area.
- Checking the work at least twice a shift to verify and document permit requirements are being observed (more frequent checks shall be made if operations or conditions are anticipated that could affect permit requirements).
- Ensuring that necessary information on chemical hazards is kept at the worksite for the employees or rescue team.
- Ensuring a rescue team is available and instructed in their rescue duties (i.e., an onsite team or a prearranged outside rescue service).
- Ensuring the rescue team members have current certification in first aid and cardiopulmonary resuscitation (CPR).

Attendants

The Attendants will:

- At least one attendant will be stationed outside of the confined workspace for the duration of entry operations. The Attendant(s) shall: The Rescue team will be called in in the event that the Attendant is assigned to multiple space in order to respond to an emergency.
- Be knowledgeable of, and be able to recognize potential confined space hazards.
- Maintain a sign-in/sign-out log with a count of all persons in a confined space, and ensure all entrants sign in and out.
- Monitor surrounding activities to ensure the safety of personnel.
- Maintain effective and continuous communication with personnel during confined space entry, work, and exit.
- Order personnel to evacuate the confined space if he/she:
 - observes a condition which is not allowed on the entry permit;
 - notices the entrants acting strangely, possibly as a result of exposure to hazardous substances
 - notices a situation outside the confined space which could endanger personnel;
 - notices a hazard within the confined space that has not been previously recognized or taken into consideration
 - leave his/her work station or must focus attention on the rescue of personnel in some other confined space that he/she is monitoring.
 - immediately summon the Rescue Team if crew rescue becomes necessary.
 - keep unauthorized persons out of the confined space, order them out, or notify authorized personnel of an unauthorized entry.

Rescue Team

The Rescue Team members will:

- Complete a training drill using mannequins or personnel in a simulation of the confined space prior to the issuance of an entry permit for any confined space and at least annually thereafter
- Respond immediately to rescue calls from the Attendant or any other person recognizing a need for rescue from the confined space.
- In addition to emergency response training, receive the same training as that required of the authorized entrants.
- Have current certification in first aid and CPR.

Entrants/Affected Employees

Entrants/Affected Employees will:

- Participate in development implementation of all aspects of the permit required confined space entry program.
- Read and observe the entry permit requirements.
- Remain alert to the hazards that could be encountered while in the confined space.
- Properly use the personal protective equipment that is required by the permit.
- Immediately exit the confined space when they are ordered to do so by an authorized person, they notice or recognize signs or symptoms of exposure, a prohibited condition exists or the automatic alarm system sounds.
- Alert Attendant(s) when a prohibited condition exists and/or when warning signs or symptoms of exposure exist.

C. DEFINITIONS**1. Confined Space:**

- A working space meeting all of the criteria listed below:
 - Large enough for someone to enter and work
 - Limited or restricted means for entry or exit
 - Not designed for continuous occupancy
- Examples of possible confined spaces: tanks, transformers, circuit breakers, ventilation or exhaust ducts, tunnels, and pipelines.

2. Enclosed Space:

- A working space meeting all of the criteria listed below:
 - Large enough for someone to enter and work
 - Limited or restricted means for entry or exit

- Is designed for periodic employee entry under normal operating conditions.
 - Note: This space under normal conditions does not contain a hazardous atmosphere, but may under abnormal conditions.
 - Examples of enclosed spaces are: a manhole, vault, switching cubicle, tunnel, or shaft.
3. Hazardous Atmosphere:
- An environment that may expose employees to the risk of death, incapacitation, and impairment of ability to self-rescue (that is, escape unaided from an enclosed space), injury, or acute illness from one or more of the following causes:
 - Atmospheric oxygen concentration below 19.5% or above 23.5%
 - Flammable gas, vapor, or mist in excess of 10% of its lower flammable limit
 - Any other atmospheric condition that is immediately dangerous to life or health.
4. Permit-Required Confined Space:
- A confined space that has one or more of the following characteristics:
 - Contains or has the potential to contain a hazardous atmosphere
 - Contains material which has the potential for engulfing an entrant
 - Has an internal configuration where an entrant may become entrapped or asphyxiated by inwardly converging walls or by a floor sloping downward and tapering to a smaller cross-section
 - Contains any other recognized serious safety or health hazard (i.e., a safety hazard that exposes entrants to the risk of death, incapacitation, impairment of ability to self-rescue, injury.)
5. Vented Vault:
- A vault that has provisions for air changes using exhaust stacks and low level air intakes operating at differentials of pressure and temperature providing for air flow which precludes the development of a hazardous atmosphere.

D. HAZARD DETERMINATION

- This company does not intend to perform the initial evaluation of any confined space. It has chosen to rely upon the evaluation performed by the host employer or its designee to satisfy the requirements for safe entry into the confined space. OlympiaTech will leave it up to the host employer to coordinate operations if multiple employers are working in the same confined space.
- OlympiaTech's employees are not trained to enter and/or work in confined spaces that require the use of a "full permit" for entry or work in confined spaces where IDLH conditions are present.
- Our employees are trained to work in enclosed spaces or confined spaces that can utilize "Alternative Procedures" for entry and work, or one that does not require a permit (i.e. a Non Permit Required confined space.) As these spaces will be treated in the same manner

to ensure safe entry the terms confined space and enclosed spaces will be used interchangeably in this program.

- OlympiaTech will go through the necessary provisions and procedures for the protection of employees from external hazards including, but not limited to pedestrians & vehicles.
- The entering of any confined space can be very hazardous unless proper safety precautions are taken. For example, a person might work in a small area under several adverse conditions, such as poor lighting, slippery work surfaces, excessive noise levels, toxic and flammable gases, and oxygen deficient atmosphere.
- There must be a means of communication in place and operable to summon rescue if necessary.
- Employees, or their representatives, are entitled to request additional monitoring at any time.
- Rescue services will be either provided by the host facility or provided by an outside service which is given an opportunity to examine the entry site, practice rescue. The rescue team selected will be equipped and trained to perform the needed rescue services. This is site specific
- Proper safety precautions shall be taken to ensure these conditions are controlled such that OlympiaTech employees who are required to work in confined spaces are provided a safe and healthful work environment.

E. CONFINED SPACE ENTRY: NON-PERMIT

- Confined spaces may be classified as non-permit spaces if all atmospheric and/or other safety hazards are eliminated. A reclassification worksheet will be used to ensure that steps are taken to identify that the hazards have been removed.
- When changes occur within or to a non-permit space that may create an atmospheric hazard the following actions will be taken:
 - Evacuate the space immediately.
 - Competent Person will reevaluate the space.
 - Competent person will determine how the hazardous atmosphere developed.
 - Eliminate condition(s) that created the problem, if possible.
 - Reclassify as permit-required if necessary.
- Hazards of confined space entry:
 - Confined space entry procedures
 - Confined space rescue procedures.
- Appropriate rescue equipment must be available to ensure the prompt and safe rescue of OlympiaTech employees from the confined space.
- Before removing the entrance cover to any confined space, identify and remove all hazards:
- Check for the presence of atmospheric pressure or temperature differences.

- Evaluate the possibility of a hazardous atmosphere; e.g., oxygen deficiency, flammable gases, Carbon Monoxide (CO), or Hydrogen Sulfide (H₂S) in the space by checking for expected conditions within the space
- As mentioned above, OlympiaTech employees are prohibited from entering any “permit required” confined space because they have not been trained to do so. Therefore do not utilize procedures for closing out the permit or terminating permits.
- Test instruments used to monitor atmospheres in a confined space must be kept in calibration according to manufacturer’s recommendations.
- Before an employee enters a confined space, the internal atmosphere must be tested from outside the space for oxygen deficiency (and flammable gases and vapors, as appropriate) with a direct-reading meter or similar instrument capable of collection and immediate analysis of data samples without the need for off-site evaluation.
- Notes:
 - If oxygen levels are below “normal” the flammability test will not be accurate.
 - If it is not anticipated that a “hazardous atmosphere” could develop, the atmosphere within the confined space must be periodically or continuously monitored (e.g., area monitors, personal monitors, etc.), to ensure that the accumulation of a hazardous atmosphere does not occur.
 - If it is reasonably anticipated that a “hazardous atmosphere” could develop, continuous forced-air ventilation shall be used, and the atmosphere within the confined space shall be continuously monitored (e.g., area monitors, personal monitors, etc.), to ensure that the continuous forced-air ventilation is preventing the accumulation of a hazardous atmosphere.
 - Be sure a hazardous atmosphere (Immediate Danger to Life and Health or IDLH) does not exist within the confined space when an individual is inside.
- When it has been determined that the space is safe for entry, a written certification will be made available to each employee entering the confined space. The “Confined Space Checklist” at the end of this program can be used for this purpose.
- If a hazardous atmosphere is detected upon entry or while working the following actions will be taken:
 - Evaluate the confined space entry immediately
 - Evaluate how the hazardous atmosphere developed
 - Take actions to ensure the hazardous atmosphere is controlled or perform pre-entry testing just prior to re-entry to ensure the atmosphere is safe for re-entry.
- If flammable gases or vapors are detected, or an oxygen deficiency is found, forced air ventilation will be used to maintain oxygen at a safe level and to prevent a hazardous concentration of gases or vapors from accumulating. It is permissible to use a continuous monitoring program in place of ventilation to ensure that there is no increase in flammable gas or vapors, once safe levels of these substances have been detected.

- If continuous forced air ventilation is used, it will begin before any entry occurs into the confined space or enclosed space, and must be maintained until a safe atmosphere is confirmed, before OlympiaTech employees are allowed to enter the work area.
- The ventilation will be directed so that it ventilates the immediate area where OlympiaTech employees are present within the confined space. Forced ventilation will continue until all OlympiaTech employees have left the space unless continuous monitoring is used.
- The air supply for continuous forced ventilation must be from a clean source, and must not increase the hazards in the confined space. If open flames are used in the confined space, perform a test for flammable gases and vapors immediately before the open flame device is used and at least once per hour while the device is in use. Conduct testing more often if conditions within the confined space indicate that once per hour is insufficient to detect hazardous accumulations of flammable gases or vapors.

F. ENTRY PERMITS

The Confined Space Entry Permit is the most essential tool for assuring safety during entry in confined spaces with known hazards, or with unknown or potentially hazardous atmospheres. The entry permit process guides the supervisor and workers through a systematic evaluation of the space to be entered. The permit should be used to establish appropriate conditions. Before each entry into a confined space, an entry permit will be completed by Responsible Person. The Responsible Person will then communicate the contents of the permit to all employees involved in the operation, and post the permit conspicuously near the work location. A standard entry permit shall be used for all entries.

Key Elements of Entry Permits

A standard entry permit shall contain the following items:

- Space to be entered.
- Purpose of entry.
- Date and authorized duration of the entry permit.
- Name of authorized entrants within the permit space.
- Means of identifying authorized entrants inside the permit space (i.e., rosters or tracking systems).
- Name(s) of personnel serving as Attendant(s) for the permit duration.
- Name of individual serving as Entry Supervisor, with a space for the signature or initials of the Entry Supervisor who originally authorized the entry.
- Hazards of the permit space to be entered.
- Measures used to isolate the permit space and to eliminate or control permit space hazards before entry (i.e., lockout/tagout of equipment and procedures for purging, ventilating, and flushing permit spaces).
- Acceptable entry conditions.
- Results of initial and periodic tests performed, accompanied by the names or initials of the testers and the date(s) when the tests were performed.

- Rescue and emergency services that can be summoned, and the means of contacting those services (i.e., equipment to use, phone numbers to call).
- Communication procedures used by authorized entrants and Attendant(s) to maintain contact during the entry.
- Equipment to be provided for compliance with this Confined Space Program (i.e., PPE, testing, communications, alarm systems, and rescue).
- Other information necessary for the circumstances of the particular confined space that will help ensure employee safety.
- Additional permits, such as for hot work, that have been issued to authorize work on the permit space
- Ensure the permit is canceled with the work is done.
- When work is complete in a reclassified confined space, the entry supervisor documents this on the permit. This terminates the permit and returns the confined space into a permit-required space. No one can re-enter the confined space after terminating the permit, unless you issue a new permit.
- When work is complete in a reclassified confined space, the entry supervisor documents this on the permit. This terminates the permit and returns the confined space into a permit-required space. No one can re-enter a permit is only valid for one shift. For a permit to be renewed, the following conditions shall be met before each reentry into the confined space:
 - Atmospheric testing shall be conducted and the results should be within acceptable limits. If atmospheric test results are not within acceptable limits, precautions to protect entrants against the hazards should be addressed on the permit and should be in place.
 - Responsible Person shall verify that all precautions and other measures called for on the permit are still in effect.
 - Only operations or work originally approved on the permit shall be conducted in the confined space.
- A new permit shall be issued, or the original permit will be reissued if possible, whenever changing work conditions or work activities introduce new hazards into the confined space. Responsible Person shall retain each canceled entry permit for at least one year to facilitate the review of the Confined Space Entry Program. Any problems encountered during an entry operation shall be noted on the respective permit(s) so that appropriate revisions to the confined space permit program can be made. Changes in the use or configuration of a permit-required confined space may only be reclassified as a non-permit confined space when a competent person determines that all of the applicable requirements have been met.

G. TRAINING

All affected employees who will enter confined spaces shall be trained prior to initial assignment, prior to change in assigned duties or upon the creation of new hazards in entry procedures and assigned duties.

Personnel responsible for supervising, planning, entering, or participating in confined space entry and rescue shall be adequately trained in their functional duties prior to any confined space entry.

Training shall include:

- Training and PPE shall be at no cost to the employee and in both a language and vocabulary that the employee can understand.
- Training shall be conducted before the employee is assigned confined space entry, before there is a change in assigned duties and when there is evidence of deviation from the permit.
- Explanation of the general hazards associated with confined spaces.
- Discussion of specific confined space hazards associated with the facility, location, or operation.
- Reason for, proper use, and limitations of personal protective equipment and other safety equipment required for entry into confined spaces.
- Explanation of permits and other procedural requirements for conducting a confined space entry.
- A clear understanding of what conditions would prohibit entry.
- Procedures for responding to emergencies.
- Duties and responsibilities of the confined space entry team.
- Description of how to recognize symptoms of overexposure to probable air contaminants in themselves and co-workers, and method(s) for alerting the Attendant(s).
- Refresher training shall be conducted as needed to maintain employee competence in entry procedures and precautions.

Specific Training

Training for atmospheric monitoring personnel shall include proper use of monitoring instruments, including instruction on the following:

- Proper use of the equipment
- Calibration of equipment
- Sampling strategies and techniques
- Exposure limits (PELs, TLVs, LELs, UELs, etc.).

Training for Attendants shall include the following:

- Procedures for summoning rescue or other emergency services

- Proper utilization of equipment used for communicating with entry and emergency/rescue personnel.

Training for Rescue Team and Emergency Response Personnel shall include:

- Evaluation of a Rescuers ability to respond to a rescue summons in a timely manner
- Evaluation of a Rescuers service ability in terms of proficiency with tasks and equipment.
- Selection of a rescue team that has the capability to reach the victim within a time frame appropriate for the permit
- Rescue team agrees to notify the employer immediately in the event that the rescue service becomes unavailable.
- Inform Rescue team of the hazards that they may confront.
- Provide the Rescue team with access to all permit spaces from which rescue may be necessary.
- Rescue plan and procedures developed for each type of confined space that is anticipated to be encountered
- Use of emergency rescue equipment
- First aid and CPR techniques
- Practice making permit space rescues before attempting an actual rescue and at least every 12 months by means of simulated rescue operations or rescue of actual persons from entry spaces.
- Work location and confined space configuration to minimize response time.

Verification of Training

- Periodic assessment of the effectiveness of employee training shall be conducted by Responsible Person. Training sessions shall be repeated as often as necessary to maintain an acceptable level of personnel competence. The employer shall maintain records with employee name, name of the trainer, and dates of training. The documents shall be available for the duration of that employee's employment.

DISCIPLINARY PROGRAM

A. PURPOSE AND SCOPE

The goal of this program is to provide information for OlympiaTech to conduct their operations so that injuries to people, damage to property and/or the environment will be avoided. Every effort will be made to prevent accidents. The objective is to provide a clean, safe and healthy working environment for all OlympiaTech employees. It is this company's intention to comply with all safety and health standards that are enforced by local, state or federal authorities.

The Administrative Procedures identified here more specifically address the requirements as identified in 1926.20(b) Accident prevention responsibilities to initiate and maintain such programs and 1926.21 Safety training and education to recognize, avoid and prevent unsafe conditions.

This company will provide engineering controls, administrative controls, personal protective equipment and training to abate hazards and to prevent injury and illness. This company has developed policies, rules and procedures which will contribute to the safety of all OlympiaTech employees.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Monitor the implementation and enforcement of the policies and procedures established by this safety program as well as the requirements set forth by federal, state and local regulations.
- Serve as the Chairman of the Safety Committee and ensure that the following actions are implemented:
- Review the conditions of the workplace and jobsites.
- Develop an effective plan to address the abatement of hazards.
- Provide on-going safety training to workers, supervisors, safety committee members and management.
- Maintain all records and documents associated with the safety program and generate all required reports.
- Conduct accident and incident investigations and provide corresponding reports.
- Maintain an effective system of communication between workers, supervisors and management relevant to the safety program and abatement of hazards.
- Communicate company policies and procedures with other contractors, subcontractors and hosts and ensure that all work is performed in a safe and compliant manner.
- Conduct a periodic review of the safety program as a whole and make revisions as needed to address changing regulations or conditions.

Management

Management will:

- Provide the time, resources and authority needed to develop and execute the safety program.
- Monitor the progress of the safety program and take action to ensure its success. This will include the review of incident reports, accident reports, policies, procedures and written communication.
- Lead by example and follow the same policies, procedures and rules established for the workers.

Supervisors

Supervisors will:

- Ensure a “competent person” is available as needed for each work area (jobsite). Competent persons will have the knowledge to recognize hazards and the authority to take appropriate action.
- Evaluate their assigned work areas. They will identify hazards and take action to abate the hazards in accordance with federal, state, and local regulations as well as the policies, procedures and rules established by this company.
- Inspect and monitor their assigned work areas.
- They will ensure that all work is performed safely and in accordance with federal, state, and local regulations as well as the policies, procedures and rules established by OlympiaTech employees.
- Enforce the policies, procedures and rules established in the safety program in accordance with OlympiaTech employee’s disciplinary policy.
- Assist in the on-going training of workers by conducting periodic safety talks and activities. They will also bring any problems or concerns of the workers to the attention of management, the Safety Director and/or the Safety Committee.
- If requested, will serve on the Safety Committee and complete assigned tasks needed to execute the safety program.

Employees

Employees are:

- Required to work safely in accordance with state, federal and local regulations as well as the rules established by this company. This will include, but is not limited to, OSH Act 5(b) “Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.”
- Required to notify their supervisor immediately of any unsafe acts or conditions they observe.
- Encouraged to take an active role in the safety program and make recommendations to improve any and all parts of the program.

C. SAFETY RULES

- All company safety policies and procedures must be followed.
- Anyone known to be under the influence of alcohol and/or drugs shall not be allowed on company property. Persons with symptoms of alcohol and/or drug abuse are encouraged to discuss personal or work-related problems with the supervisor/or employer.
- No one knowingly shall be permitted or required to work while his or her ability or alertness is impaired by fatigue, illness or other causes that might expose the individual or others to injury.
- Horseplay, scuffling and other acts which tend to endanger the safety or well being of OlympiaTech employees are prohibited. Fighting or instigating fights will not be tolerated.
- All injuries shall be reported promptly to the supervisor/employer so that arrangements can be made for medical and/or first aid treatment.
- Work shall be well planned and supervised to prevent injuries when working with equipment and handling heavy materials. When lifting heavy objects; OlympiaTech employees should bend their knees and use the muscles of the legs instead of the smaller muscles of the back.
- OlympiaTech employees should check to see that all guards and other protective devices are in place, and properly adjusted, and shall report deficiencies to management.
- OlympiaTech employees shall not handle or tamper with any electrical equipment, machinery or air or water lines in a manner not within the scope of their duties unless they have received instructions from their supervisor/or employer. Only trained and authorized OlympiaTech employees shall operate machinery, equipment, tools or company vehicles.
- All tools and equipment must be inspected before and after each use. NEVER use damaged equipment. Destroy or tag defective tools and equipment out of service.
- Observe all warning signs and tags. Ask your supervisor if you are not sure what they mean.
- All power tools and sources of ignition that may be present shall be turned off or disconnected before working with solvent materials with a low flashpoint. Smoking is only allowed in designated areas.
- Machinery shall not be repaired or adjusted while energized or in operation. All adjustments and repairs must be done in accordance with the Hazardous Energy Control Plan.
- OlympiaTech employees shall cleanse thoroughly after handling hazardous substances, and follow special instructions from authorized sources.
- Sturdy work shoes, preferably high top leather with nonskid soles, are recommended. Inappropriate footwear shall not be worn. Insulated shoes should be worn as needed. Only clothing that will not contribute to injury from electric arcing and burns shall be worn. Flame Resistant (FR) clothing may be needed per our Electrical Safety Program. Pants shall be long-legged. Hats and gloves must be worn when necessary. Loose or frayed clothing, dangling ties, finger rings, etc. must NOT be worn around moving machinery or other places where they can get caught.

- Approved protective equipment shall be worn in specified work areas and in the execution of tasks that require their use.
- In addition to the rules established here, OlympiaTech employees are expected to follow all safety policies, procedures and instructions provided in training.

D. ACCIDENTS/INCIDENTS

- Each OlympiaTech employees has the responsibility to immediately report all work-related accidents, incidents (near miss accidents) or illnesses to his/her supervisor.
- Unsafe acts and conditions observed by any employee should immediately be brought to the attention of the supervisor.
- Supervisory personnel are required to document all accidents, incidents, illnesses, unsafe acts and unsafe conditions reported by OlympiaTech employees and submit a report to the Safety Director as soon as possible.
- Supervisory personnel are required to immediately take the appropriate corrective action that will ensure the prevention of future accidents and/or incidents.
- The Safety Director will ensure that a thorough investigation of the incident/accident is made and that additional corrective action, if required is taken.
- In the case of a fatality or hospitalization of three or more OlympiaTech employees the Safety Director will be notified as soon as possible. The Safety Director will notify the local OSHA Office or contact 1-800-321-OSHA to report the accident within 8 hours of receiving notice of it.

E. RECORDS

- The Safety Director will ensure that all records and documents related to the safety program are properly maintained. This will include safety data sheets, accident/incident reports, and the OSHA Log and Summary.
- The Safety Director will ensure accidents are entered in the OSHA log within 6 days of knowledge of the accident.
- Medical records, if required will be kept with the physician administering the service.
- Requests for documents and records should be submitted to the Safety Director.

F. COMMUNICATION AND TRAINING

- No employee will be allowed to perform a job or task unless they have received training on the hazards present and the precautions necessary to perform the job safely. The Safety Director will ensure the following training is provided:
 - Orientation Training

Each new and newly assigned worker will participate in a safety orientation training session. Participants will be instructed in all elements of the safety program and will complete all safety training required by federal and local agencies.
 - Refresher Training

On-going safety training will be a primary component of OlympiaTech employee's safety program. This training may take the form of classroom or on-the-job instruction. The Safety Director and Safety Committee will establish a training agenda. This agenda will include all refresher training required by federal, state and local agencies.

- Job Briefings

Job site supervisors will conduct a job briefing at the beginning of each shift. Briefings will be performed per OlympiaTech employee's protocols and the briefings checklist used. The job briefing will identify job assignments, procedures to be followed and the actions that will be taken to protect workers in the performance of their assigned tasks. Additional briefings will be conducted as tasks, assignments or conditions warrant.

- Safety Talks/Meetings

The Safety Director will ensure that periodic safety talks, activities and meetings are conducted by supervisors on the job. They will provide refresher training to workers and introduce new policies, procedures and hazard controls to be applied. The meetings will also serve as a means for workers to bring safety concerns to the attention of management.

- Management/Supervisor/Safety Committee Training

Special training will be provided to management, supervisors and safety committee members. This training will address the requirements of OSHA regulations and best safety practices used in our industry. Training will be provided on an on-going basis so that our safety program is kept current and effective.

G. SAFETY EVALUATIONS & INSPECTIONS

- The training agenda will also be based on a recent hazard analysis and review of accident/incident reports.

- Hazard Specific Training

Before beginning a new job a review of the hazards will be conducted by the supervisor. Training will be provided for any new hazards introduced to the workers. This may include the introduction of new substances, equipment, tools, processes or procedures.

- Each employee will perform a safety check of the work area at the beginning of the shift. They will also check equipment, tools and personal protective equipment before each use.
- The supervisor will evaluate their assigned work area for hazards and ensure that a plan is established to abate hazards. They will ensure that hazards are abated in accordance with federal, state, and local regulations as well as the policies, procedures and rules established by OlympiaTech employees.
- Supervisors will inspect the work area, equipment, tools and protective equipment at the beginning of each shift. Supervisors will continue to monitor activity throughout the shift so that incidents/accidents are prevented.
- The Safety Director, Safety Committee or an assigned representative will perform periodic inspections. A report of the inspections will be generated and action taken to improve the safety and health of workers.

H. MULTI-EMPLOYER WORKSITE POLICY

- The Safety Director will ensure that all safety procedures are reviewed with the Host Employer, General Contractor and Affected Contractors before a job begins. Specific written policies and procedures will be shared. This review will include materials safety data sheets, labeling, emergency action plans, and the interpretation of signs and tags. All relevant information will be communicated to supervisors and workers.

I. VISITORS

- No visitors will be allowed on company property or jobsites unless they have received permission from a designated company representative and completed all necessary paperwork.
- Visitors entering will be escorted by designated personnel and receive a briefing on appropriate safety precautions to be observed. Required personal protective equipment, (PPE) will be provided as needed.

J. DISCIPLINARY POLICY

- This company strives to create a safe and healthy workplace for all OlympiaTech employees. To achieve this objective will require the cooperation of everyone. Supervisors must enforce all company safety policies and procedures.
- In the event that any employee deliberately fails to follow the prescribed safe work procedure or deliberately fails to use the prescribed safety equipment disciplinary action may be initiated and these actions will be documented.
- Incidents that involve imminent danger or in the opinion of the supervisor show a complete disregard for safety shall be immediately referred to management for appropriate action.

K. SAFETY COMMITTEE

- This organization has established a joint employee-management safety committee to protect the safety and health of its OlympiaTech employees.
- Role of the Safety Committee
- The Safety Committee will:
 - Perform an ongoing evaluation of the safety program.
 - Review the conditions of the workplace and assist in developing plans to address the hazards and comply with OSHA regulations.
 - Review all documents, records and reports associated with the safety program and recommend actions to improve performance and compliance with OSHA regulations.
 - Review all communication between workers, supervisors and management relevant to the safety program and recommend actions to be taken.
 - Accept and complete assigned tasks needed to execute the safety program.
- Organization of the Safety Committee

- The Safety Committee will be comprised of supervisors and selected workers who have taken an interest in safety. The Safety Director shall serve as a representative of management and act as Chairman of the Safety Committee.
- Safety Committee Procedures
 - The safety committee will meet once a month.
 - The Chairman will establish an agenda to be followed.
 - The Chairman will ensure that minutes of each meeting are taken. The Chairman will review the results of the meeting with management and take appropriate actions.
 - A report of the meeting will be posted or communicated to OlympiaTech .

ELECTRICAL SAFETY AWARENESS PROGRAM

A. PURPOSE AND SCOPE

A universal safety concept is to control all forms of hazardous energy. This applies to all forms of energy including, mechanical, pneumatic, hydraulic and electric. This Electrical Safety Program will focus on safely working with electrical hazardous energy. OlympiaTech normally does work covered by OSHA's 29 CFR 1910.147, Subpart S Electrical of the General Industry Standards & Subpart K Electrical of the Construction Industry Standards and the National Electrical Code (NEC). In some instances work is done that is covered by OSHA's 29 CFR 1910.269 & 1926 Subpart V and the National Electrical Safety Code (NESC). It also recognizes that NFPA 70E the Standard for Electrical Safety in the Workplace offers guidance on certain electrical safety procedures.

OSHA and the NFPA 70E:

- OSHA requirements are not recommendations. There are a number of OSHA requirements that address the hazards of working on or near exposed energized parts for construction and maintenance work. These requirements are often written in performance language, requiring compliance without necessarily stating how to comply.
- The NFPA 70E, Standard for Electrical Safety in the Workplace, is written in prescriptive language and is an important national consensus standard that defines the requirements for an overall electrical safety program.
- As such, the procedures found within this policy are taken directly from the NFPA 70E - Electrical Safety in the Workplace and will cover the majority of the work locations and tasks our electricians and contractors face. It is NOT all encompassing.
- Certain tasks performed on very high hazard electrical systems and equipment, those with high level available fault currents and / or long fault clearing times, or exposures exceeding 600 volts, will require the direct use of the current edition of the NFPA 70E standard to determine proper PPE and safe work practices and procedures.

B. RESPONSIBILITIES

General Contractor/Host

The General Contractor/Host will:

- Review the letter provided by OlympiaTech on Customer or General Contractor electrical related hazards and responsibilities.
- Inform our Safety Director of known hazards associated with electrical installation, maintenance or repair that is related to the work OlympiaTech will be performing and might not be recognized by our employees
- Inform our Safety Director about the installation that the contract employer needs to make the assessments
- Report any safety violations by our OlympiaTech employees that are observed to our Safety Director

Safety Director

The Safety Director will:

- Monitor this Electrical Safety Program. Questions regarding this program and any information associated with it should be directed to the Safety Director.
- Ensure that all OlympiaTech employees are properly trained for the tasks they will perform. Only persons specifically approved by the Safety Director may install, modify, repair, or work on electrical conductors and equipment.
- Participate in the approval of all energized work and preparation of the Energized Electrical Work Permit required for work to begin.
- With the assistance of the supervisor and/or their designees, perform periodic assessments of OlympiaTech employees to ensure their abilities are appropriate for the tasks performed.
- Perform an audit annual of the electrical safety principles identified in this program.

Supervisors

Supervisors will:

- Ensure that safe work methods and procedures are being utilized.
- Ensure that the right tools are available and used for the jobs performed.
- Ensure required inspections, testing and maintenance is performed. Where tools or equipment are found to be defective, they shall be tagged, re- moved from service, and reported to Safety Director as soon as possible.

Employees

All employees:

- Must continuously remain alert to his or her surroundings and the work activities being performed.
- Will follow all safety procedures described in this program.
- Will perform inspections on all equipment and tools before each use. Where tools or equipment are found to be defective, they shall be tagged, removed from service, and reported to supervision as soon as possible.
- Shall report any conditions or activities which pose a risk to themselves or others. Remember, when you see that a safety rule is being violated, that silence is consent!
- Will refer all questions to the Safety Director or

C. LOCK OUT

The following basic principles are the foundation upon which this electrical safety program has been established. All OlympiaTech employees including management, the Safety Director, Supervisors and OlympiaTech employees shall apply these principles to the all tasks.

- When working on or near exposed de-energized parts they will be treated as live

- The inspection and evaluation of electrical equipment shall be part of all procedures.
- All electrical conductors and circuit parts shall be considered energized until tested and placed in an electrically safe working condition.
- The integrity of equipment enclosures and insulation shall be maintained unless exposure is absolutely necessary and actions have been taken to provide the appropriate protection (e.g. work cannot be performed with the enclosure in place and equipment and conductors have been placed in an electrically safe work condition or an Energized Electrical Work Permit has been completed in accordance with this program.)
- Work will not begin on a job unless a written plan is in place identifying the procedures to be used. Jobs which have not been performed and for which no plan exists will require the development of a new plan.
- The primary method for ensuring safety shall be to de-energize (create an electrically safe work condition) in accordance with the OlympiaTech Lockout/ Tagout (LOTO) program.
- Work that must be performed energized shall be justified as follows and requires completion and approval of an Energized Electrical Work Permit.
- Energized work shall only be justified when it can be demonstrated that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Energized parts that operate at less than 50 volts to ground shall not be required to be de-energized if there will be no increased exposure to electrical burns or to explosion due to electric arcs.
- Examples of increased or additional hazards include, but are not limited to, interruption of life support equipment, deactivation of emergency alarm systems, and shutdown of hazardous location ventilation equipment.
- Examples of work that might be performed on or near exposed energized electrical conductors or circuit parts because of infeasibility due to equipment design or operational limitations include performing diagnostics and testing (e.g., start-up or troubleshooting) of electric circuits that can only be performed with the circuit energized and work on circuits that form an integral part of a continuous process that would otherwise need to be completely shut down in order to permit work on one circuit or piece of equipment.
- In preparing for a job, an effort will be made to anticipate unexpected events through a hazard/risk evaluation, completion of a planning checklist, and job briefing.
- Based on the hazard/risk evaluation, actions will be taken to minimize or eliminate hazards and protect OlympiaTech employees from shock, burn, blast, and other hazards due to the working environment.
- OlympiaTech employees shall not knowingly be permitted to work on electrical circuits, parts or equipment:
- When their alertness is recognizably impaired due to illness, fatigue, or other reasons.
- Where obstructions or the lack of illumination prevent a clear view of the work to be performed.

D. EMPLOYEE INFORMATION AND TRAINING

All OlympiaTech employees are trained in and familiar with:

- Safety related work practices
- Safety related work procedures
- Safety related protective equipment
- Safety related personal protective equipment.

Qualified OlympiaTech employees are knowledgeable, trained and have demonstrated proficiency in:

- Skills and techniques necessary to distinguish exposed live parts from other parts
- Skills and techniques to determine the nominal voltage of exposed live parts
- Minimum approach distances corresponding to those in Table S5 when working in the vicinity of overhead lines.

*****NOTE***ONLY IBEW TRAINED EMPLOYEES WORK ON, AROUND, OR NEAR ENERGIZED AS WELL AS NON-ENERGIZED SYSTEMS.**

- The proper use of special precautionary techniques, personal protective equipment (PPE), insulating and shielding materials, and insulated tools as required in performing the assigned work.
- Refresher training will be conducted prior to performing those tasks which have not been performed within the past year, or when observation of the employee's work performance demonstrates the need for refresher training.
- A Job Briefing shall be conducted as described in the Administrative section of this manual.

ENERGIZED ELECTRICAL WORK

A. PURPOSE AND SCOPE

- This program has been established to keep our electrical workers safe from hazards associated with energized electrical work tasks. Using this policy will help keep our NECA and IBEW electrical contractors compliant with state and federal requirements for employee safety in the workplace.
- OSHA and NFPA 70E standards require that all energized circuit parts and equipment be DE-ENERGIZED before any employee works on or near them. De-energizing must be used as the primary method of worker protection from electrical hazards.
- Exemptions to Work Permit. There are very few exceptions to this rule. Work performed on or near live parts by qualified persons related to tasks such as testing, troubleshooting, voltage measuring, etc. shall be permitted to be performed without an energized electrical work permit, provided appropriate safe work practices and personal protective equipment in accordance with this procedure are provided and used.

B. DEFINITIONS

ARC FLASH HAZARD ANALYSIS:

- A study investigating a worker's potential exposure to arc-flash energy, conducted for the purpose of injury prevention and the determination of safe work practices, arc flash protection boundary, and the appropriate levels of personal protective equipment (PPE).

ARC FLASH HAZARD:

- A dangerous condition associated with the possible release of energy caused by an electric arc.

ARC RATING:

- The value attributed to materials that describes their performance to exposure to an electrical arc discharge.
- The Arc is expressed in cal/cm² and is derived from the determined value of the arc thermal performance value (ATPV) or energy of break open threshold (EBT).

BOUNDARY, ARC FLASH:

- When an arc flash exists, an approach limit at a distance from a prospective arc source within which a person could receive a second degree burn if an electric arc were to occur.

BOUNDARY, LIMITED APPROACH:

- An approach limit at a distance from an exposed energized electrical conductor or circuit part within which a shock hazard exists.

BOUNDARY, RESTRICTED APPROACH:

- An approach limit at a distance from an exposed energized electrical conductor or circuit part within which there is an increased likelihood of electric shock, due to electrical arc-over combined with inadvertent movement, for personnel working in close proximity to the energized electrical conductor or circuit part.

CALORIE PER CENTIMETER SQUARED (cal/cm²):

- The unit of measurement used to express the amount of thermal energy released during an arc flash event.

ELECTRICAL HAZARD:

- A dangerous condition such that contact or equipment failure can result in electrical shock, arc flash burn, thermal burn, or blast.

ELECTRICALLY SAFE WORK CONDITION:

- A state in which an electrical conductor or circuit part has been disconnected from energized parts, locked and tagged in accordance with established standards, tested to ensure the absence of voltage and grounded if determined necessary.

EMERGENCY PROCEDURES:

- OlympiaTech employees exposed to shock hazards shall be trained and regularly instructed in methods of release and resuscitation of victims from contact with exposed energized electrical conductors or circuit parts.

ENERGIZED ELECTRICAL WORK (EEW):

- Working on or near exposed energized parts 50 volts or greater and/or within the flash protection boundary.

ENERGIZED ELECTRICAL WORK PERMIT:

- If live parts are not placed in an electrically safe work condition, work by a qualified person shall be performed by written permit only.
- Exception: Diagnostics, testing, troubleshooting, and voltage measuring shall be permitted to be performed without an EEW permit, provided appropriate safe work practices PPE is provided and used.

EQUIPMENT LABELING:

- Equipment shall be field marked with a label containing the available incident energy or required level of

PPE EXPOSED:

- (As applied to energized electrical conductors or circuit parts) Capable of being inadvertently touched or approached nearer than a safe distance by a person. It applies to energized parts that are not suitably guarded, isolated or insulated.

HAZARD IDENTIFICATION AND RISK ASSESSMENT PROCEDURE:

- An electrical safety program shall include a hazard identification and risk evaluation procedure to be used before work is started within the Limited Approach Boundary or within the Arc Flash Boundary of energized electrical conductors and circuit parts operating at 50 volts or more or where any electrical hazards exists.

HOST AND CONTRACT EMPLOYER RESPONSIBILITIES:

- The host employer (general contractor, customer or owner) and the contract employer(s) shall inform each other of existing hazards, personal protective equipment including arc-rated clothing requirements, safe work practice practices, and emergency & evacuation procedures applicable to the work to be performed. There shall be a documented meeting between the Host and Contract Employers. NFPA 70E

INCIDENT ENERGY:

- The amount of energy impressed on a surface, a certain distance from the source, generated during an electrical arc event. One of the units used to measure incident energy is cal / cm².

JOB BRIEFING:

- Before starting each job, the employee in charge shall conduct a job briefing with the OlympiaTech employees involved. The briefing shall cover subjects identified on the Energized Electrical Work Permit such as hazards associated with the job, work procedures involved, special precautions, energy source controls, and PPE requirements.

LESS THAN 50 VOLTS:

- For voltages of less than 50 volts, the decision to de-energize should include consideration of the capacity of the source and any over current protection between the energy source and the worker.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

- OlympiaTech employees working in areas where electrical hazards are present shall be provided with, and shall use, protective equipment that is designed and constructed for the specific part of the body and for the work to be performed. The equipment shall be maintained in a safe, reliable condition and shall be visually inspected before each use.

QUALIFIED PERSON:

- A person who is trained and knowledgeable of the construction and operation of equipment or a specific work method and is trained to recognize and avoid the electrical hazards that might be present with respect to that equipment or work method and has received safety training to recognize and avoid the hazards involved. Such persons shall also be familiar with the proper use of special precautionary techniques, personal protective equipment, including arc-flash, insulating and shielding materials, and insulated tools and test equipment. A person can be considered qualified with respect to certain equipment and methods, but still be unqualified for others.

RATING:

- Test instruments, equipment, and their accessories shall be rated for circuits and equipment to which they will be connected. They shall be inspected and correct operation verified before and after an absence of voltage test is performed.

SAFETY TRAINING:

- OlympiaTech employees shall be trained to understand the specific hazards associated with electrical energy. They shall be trained in safety-related work practices and procedural requirements, as necessary, to provide protection from the electrical hazards associated with their respective job or task assignments. OlympiaTech employees shall be trained to identify and understand the relationship between electrical hazards and possible injury.

SHOCK HAZARD ANALYSIS:

- A shock hazard analysis shall determine the voltage to which personnel will be exposed, boundary requirements, and the PPE necessary in order to minimize the possibility of electric shock to personnel.

WORK DE-ENERGIZED:

- Live parts shall be put into an electrically safe work condition (by de-energizing and using lockout/tagout) before an employee is exposed to electrical hazards.

(See Lockout / Tagout Procedures)

- When the employer can demonstrate that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operation limitations, energized work may be allowed.

Examples of increased or additional hazards:

- Interruption of life support equipment.

- Deactivation of emergency alarm systems.
- Shutdown of hazardous location ventilation equipment.

Examples of infeasibility due to equipment design or operational limitations:

- Diagnostics and testing/troubleshooting.
- Circuits that form an integral part of a continuous process that would otherwise need to be completely shut down in order to permit work on one circuit or piece of equipment.
- Once boundaries have been established, determine the level of potential arc flash hazard from the appropriate tables located in NFPA 70E or use the NECA PPE Selector Guide.

When using the tables of NFPA 70E

- Locate the specific electrical task or condition for the equipment to be worked upon, select the Arc Flash
- Perform shock and arc flash hazard analysis to determine arc flash protection and shock protection boundaries, predict potential incident energies and select appropriate PPE
- Keep in mind that Arc Flash Protection Boundary distances vary based on the amount of available fault current and the clearing times of over current protection devices. Shock Protection Boundaries vary based on the nominal voltage and fixed electrical parts (buss) vs. moveable conductors (overhead lines = 10' clearance).
- Default distances for this document are: Shock - exposed fixed parts = 42" minimum Arc Flash = 4' minimum *for systems not exceeding maximum 100KA cycles (product of clearing time multiplied by available fault current)

Shock Boundaries

- Restricted Approach = 12" Limited Approach = 42" Arc Flash Boundary = 48" PPE Category. This number will identify what PPE is required for arc flash related hazards.
- Document your selections on the Energized Electrical

Work Permit.

- Remember! Energized electrical work must be justified and only then shall qualified and protected persons be allowed to cross these boundaries.

C. RESPONSIBILITIES**Safety Director**

The Safety Director:

- Will receive all requests to work energized.
- Will coordinate the completion and approval of the Energized Electrical Work Permit and Hazard/Risk Assessment.
- Or designee shall ensure that all OlympiaTech employees are qualified and have received specific training needed to work energized on the project.
- Shall compile and maintain a list of authorized individuals who have received training that qualifies them to perform specific tasks energized.

Supervisor

The Supervisor will:

- Ensure that an Energized Electrical Work Permit is revised before allowing work to begin on an energized circuit.
- Confirm the individuals assigned to work energized on the jobsite are authorized.
- Ensure PPE is provided and worn in accordance with the Hazard Assessment and Energized Electrical Work Permit.
- Ensure all boundaries are maintained

Employee

OlympiaTech employees will:

- Not perform any energized work for which they have not been authorized.
- Comply with the Energized Electrical Work Permit and all company safety principles including the electrical safety principles.

D. ACTIONS

- Where planning has determined a phase of a project requires work to be performed energized those involved will consult with the Safety Director.
- Any employee assigned to a task that feels that it must be performed energized will submit a request to the Safety Director.
- An Electrical Hazard Analysis will be performed. This involves conducting both a shock hazard and arc flash hazard analysis. The Host Company shall be consulted for any information needed to complete the analysis.

The following will be documented on OlympiaTech :

Hazard/Risk Assessment Sheet for that project:

- Shock Hazard Analysis Result
- Limited, and Restricted Approach Boundary requirements
- Flash Hazard Analyst
- Flash Protection Boundary (FPB)

PPE when inside the FPB.

The Energized Electrical Work Permit shall be completed and approved for each task before work can begin. The Permit must include:

- A description of the circuit and equipment to be worked on and the location
- Justification for why the work must be performed in an energized condition
- A description of the safe work practices to be employed

- Results of the shock hazard analysis
- Determination of shock protection boundaries
- Results of the flash hazard analysis
- The Flash Protection Boundary
- The necessary PPE to safely perform the assigned task
- Means employed to restrict access of unqualified persons from the work area with a distance of at least 10 feet.
- Evidence of completion of a job briefing, including a discussion of any job-specific hazards
- Energized work approval signatures

Exemptions to Work Permit:

- Work performed on or near live parts by qualified persons related to tasks such as testing, troubleshooting, voltage measuring, etc. shall be permitted to be performed without an energized electrical work permit, provided appropriate safe work practices and personal protective equipment in accordance with this procedure are provided and used.
- A single Energized Electrical Work Permit may be allowed for work that is routine and/or repetitive in nature, such as trouble shooting on a construction project. This permit must be on file with the Safety Director and a list of the specific tasks to which it applies identified. OlympiaTech employees must notify the Safety Director of any conditions that change or if new hazards are introduced and a new permit is created.
- The Energized Electrical Work Permit shall be re- viewed by each employee performing the work and will be maintained in the immediate work area.
- OlympiaTech employees working in areas where electrical hazards are present shall be provided with, and shall use, protective equipment that is designed and constructed for the specific part of the body to be protected and for the work to be performed. Clothing and equipment shall comply with the specifications set forth by NFPA 70E for the task to be performed and the incident energy level to which they may be exposed.
- No OlympiaTech employees shall be allowed to work within the FPB where the incident energy level exceeds 167.36 J/cm² (40 cal/cm²).
- Protective equipment shall be maintained in a safe, reliable condition. The protective equipment shall be visually inspected before each use. The requirements for periodic testing of electrical protective equipment found in the ANSI and ASTM standards referenced in NFPA 70E shall be used for this purpose.
- Protective clothing (i.e. AR apparel) shall be inspected before each use. The garment manufacturer's instructions for the care and maintenance of AR apparel shall be followed.
- Clothing shall cover potentially exposed areas as completely as possible. Shirt sleeves shall be fastened at the wrists, and shirts and jackets shall be closed at the neck.
- Work clothing or flash suits that are contaminated, or damaged to the extent their protective qualities are impaired, shall not be used. Protective items that become contaminated with grease, oil, or flammable liquids or combustible materials shall not be used.

- Conductive articles of jewelry and clothing (such as watchbands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, metal headgear, or metal frame glasses) shall not be worn where they present an electrical contact hazard with exposed live parts.
- OlympiaTech employees shall use insulated tools and/or handling equipment when working inside the Limited Approach Boundary of exposed live parts where tools or handling equipment might make accidental contact. Insulated tools shall be protected from damage to the insulating material.
- Insulated tools shall be rated for the voltages on which they are used.
- Insulated tools shall be designed and constructed for the environment to which they are exposed and the manner in which they are used.
- Fuse or fuse holder handling equipment, insulated for the circuit voltage, shall be used to remove or install a fuse if the fuse terminals are energized. Ropes and hand lines used shall be nonconductive. Fiberglass reinforced plastic rod and tube used for live line tools shall meet the requirements of ASTM F 711,
- Standard Specification for Fiberglass-Reinforced Plastic (FRP) Rod and Tube Used; in Live Line Tools, 1989 (R1997).
- Portable Non Conductive ladders shall meet the requirements of ANSI standards for ladders listed in NFPA 70E. Portable ladders will have non-conductive side rails
- Protective shields, protective barriers, or insulating materials shall be used to protect each employee from shock, burns, or other electrically related injuries while that employee is working near live parts that might be accidentally contacted or where dangerous electric heating or arcing might occur.
- Normally enclosed live parts are exposed for maintenance or repair shall be guarded to protect un- qualified persons from contact with the live parts.
- Rubber insulating equipment used for protection from accidental contact with live parts shall meet the requirements of the ASTM standards listed in NFPA 70E.
- Plastic guard equipment for protection of OlympiaTech employees from accidental contact with live parts, or for the protection of OlympiaTech employees or energized equipment or material from contact with ground, shall meet the requirements of the ASTM standards listed in NFPA 70E.).
- Conductive materials, tools, and equipment that are in contact with any part of an employee's body shall be handled in a manner that prevents accidental contact with live parts. Such materials and equipment include, but are not limited to, long conductive objects, such as ducts, pipes and tubes, conductive hose and rope, metal-lined rules and scales, steel tapes, pulling lines, metal scaffold parts, structural members, bull floats, and chains.
- When an employee works in a confined or enclosed space (such as a manhole or vault) protective shields, protective barriers, or insulating materials shall be used as needed to prevent inadvertent contact with these parts. Doors, hinged panels, and the like shall be secured to prevent their swinging into an employee and causing the employee to contact exposed live parts.

- OlympiaTech employees shall not perform housekeeping duties inside the Limited Approach Boundary where there is a possibility of contact, unless adequate safeguards (such as insulating equipment or barriers) are provided to prevent contact.
- Barricades, signs and warning tape shall be used to identify and maintain boundaries as determined by the Electrical Hazard Analysis.

E. EMPLOYEE INFORMATION AND TRAINING

Qualified Personnel (i.e. authorized to work energized) shall be trained in:

- The applicable procedures associated with securing and implementing an Energized Electrical Work Permit
- NFPA 70E
- OSHA Electrical Safety Work Practices
- Electrical safety work practices as needed for the tasks to be performed.

Non-Qualified Personnel (workers who will assist, such as an electrical apprentice) shall be trained in:

- The applicable procedures associated with securing and implementing an Energized Electrical Work Permit
- NFPA 70E
- OSHA Electrical Safety Work Practices

Qualified and Non-Qualified personnel shall:

- Receive re-training as needed.
- Participate in the job debriefing and understand all safety precautions determined by the applicable Energized Electrical Work Permit

ELECTRIC TRANSMISSION AND DISTRIBUTION SYSTEMS

A. PURPOSE AND SCOPE

- This procedure shall be used to provide a safer workplace with respect to the electrical hazards associated with electric transmission and distribution. It addresses the electrical safety requirements found in 1926 Subpart V Power Transmission and Distribution and 1910.269 Electric Power Generation, Transmission and Distribution.
- It is the responsibility of the host and contract employers to share information related to safety-related work matters and they must coordinate work rules and procedures between them.

B. MINIMUM APPROACH DISTANCES (MADS)

- No employee may approach or take any conductive object closer to exposed energized parts as identified by OSHA in the Minimum Approach Distances (MAD) tables unless:
- The employee is insulated from the energized part through the use of proper class rubber insulating gloves with protectors,

- The energized part is insulated from the employee and any other conductive object at a different potential.

C. POSITIONING OF EQUIPMENT AND WORKERS

- Aerial equipment shall be placed such that the employee can select and maintain a work position that will provide the best protection from potential hazards. When working outside aerial lifts, the employee shall select and maintain a work position that will provide the best protection from potential hazards. Before attempting to do any work on or around energized lines or equipment (e.g., busses, transformers, switchgear, and switching cubicles) the layout shall be studied carefully so that a position can be taken that will provide the greatest amount of clearance. It is especially important that inadvertent movement be anticipated and where practical a position taken that will avoid contact with energized lines or equipment.
- When working on overhead conductors or busses from the pole, structure or aerial device, the worker should take a position below the energized part being worked, whenever practical. No employee may be immediately under the work area while work is in progress unless it is necessary to assist OlympiaTech employees working above.
- Where public safety is an issue, equipment shall be positioned at a location that provides the least hazard to the public while still being able to perform the work safely. Special precautions shall be taken when booms, cranes, poles, etc. are maneuvered in close proximity to energized conductors or exposed to traffic and other hazards.

D. APPAREL

- Any employee that is potentially exposed to hazards from flames or an electrical arc shall wear clothing that is arc rated and will not ignite and continue to burn.
- When work is performed within reach of exposed energized lines or equipment, all exposed conductive articles (e.g., key or watch chains, rings, wrist watches or bands) shall be removed or rendered nonconductive.
- Loose-fitting clothing, key or watch chains, rings, and wrist watches or bands present a hazard when climbing, working around rotating equipment, mobile equipment; therefore, they should not be worn when performing these tasks.

Note: Long hair also presents a hazard when working around rotating and reciprocating equipment; thus, a hair net should be worn when working in these areas.

E. PROTECTIVE COVER-UP

- Once workers reach a position within reach of energized circuits, they shall immediately cover with electrical protective equipment all live parts (e.g., adjacent wires, cables, neutrals and associated parts) and any paths-to-ground with which a worker could make accidental or incidental contact. This shall include the covering of the conductor, cable, or associated parts being worked on, in so far as practical, while still leaving room to perform the work. The reason for covering conductors, neutrals, and associated parts, and paths-to-ground is to limit the likelihood of incidental contact with phase wires and paths-to-ground in case a worker should slip or in some manner make an unanticipated move that could result in the accidental or incidental contact with live parts or a path-to-ground.

Therefore, the electrical protective cover-up installed around the work area shall be arranged to limit the likelihood of any contact with live parts or paths-to- ground.

- When all work is completed, the protective equipment shall be removed in a manner that provides the worker with maximum protection at all times while removing the electrical protective equipment, and moving out of the energized area.

F. OVERHEAD WORK

- The appropriate Class II or III rubber insulating gloves with glove protectors, shall be worn on both hands at all times when working on or when working within reach or extended reach of 25 kV or less, phase-to- phase, or 15 kV or less phase-to-ground. A hardhat, safety glasses, and FR clothing are also required to be worn. These requirements exist regardless of the type of work being performed, and even when protective equipment is in place or is being installed.

Note: For voltages from 0 - 600 volts, Class “0” gloves with protectors may be worn provided all MADs are maintained at all times.(Note: Class “00” gloves are available for use under 500V)

- When installing or removing insulated protective equipment without the use of a live-line tool and when working directly on energized conductors above 5 kV phase-to-phase, the following additional rules shall be complied with:
- Workers shall isolate themselves from ground contact by use of an insulated aerial device. Approved insulated platforms may be utilized on voltages less than 15 kV phase-to-phase. Any equipment used for this purpose shall be specifically approved and maintained for this work. Workers shall maintain MADs, or provide insulation from all paths-to-ground, including poles, and from other phase conductors.
- Vehicular and mechanical equipment will be operated so that a clearance of 10 ft. (305cm) is maintained from energized overhead lines.
- Work shall not be performed during rain, snow, mist or heavy fog. If such conditions develop when work is in progress, common sense and good judgment should be used to determine the proper course of action. This action could include:
 - Leaving the job as is, making the job temporarily safe with live-line tools or other methods, or finishing the task or job with live-line tools.

Note: When line hoses, blankets and hoods are wet, they do not provide adequate protection for the worker.

G. LIVE-LINE TOOL WORK

- Live-line tool work is a work method which provides the worker with adequate clearance from surfaces at different potential by the use of tools and equipment of sufficient length and dielectric strength to maintain clearance and insulation from these surfaces.
- Energized distribution lines of voltages 25 kV volts or below, phase-to-phase, or 15 kV volts or below, phase- to-ground, shall be worked using approved methods, either directly with rubber insulating gloves with protectors or with live-line tools with the worker isolated from the energized conductors.

- All energized lines above 25 kV volts, phase-to-phase or 15 kV volts phase-to-ground shall not be handled except with approved live-line tools or equipment and methods designated for the voltage of the line being worked.
- MADs shall be maintained while using live-line tools.
- Tools and equipment for doing live-line work shall be used in the manner for which they were designed. While handling live parts with live-line equipment, positive control shall be maintained at all times. With the exception of handling short jumpers, workers shall not depend upon their physical ability alone to maintain positive position or control of energized conductors. Collar ropes, rope blocks, tong saddles, clamps, lever lifts or other approved equipment, shall be used regardless of how light the weight or strain of the conductor might appear to be.
- Lines used to hold out energized conductors, if practical, should not be depended upon alone to hold energized conductors away from workers. Auxiliary live-line arms, hand poles, lift poles, etc. should be used to maintain more positive control of the energized conductors.
- Approved synthetic rope may be allowed to contact energized conductors. All ropes allowed to contact energized conductors shall be kept clean and dry to ensure adequate dielectric strength.
- When tying or untying conductors on insulators, extreme care shall be taken to prevent tie wires and the metal part of tie sticks from contacting arm, pole or hardware.
- Protective equipment with insulated handles is considered a live-line tool and may be installed from the pole or structure provided proper clearances are maintained.
- All live-line tools shall be electrically tested according to OSHA requirements. Only live-line tools made of fiberglass and rated at 100 kV per foot are approved for use on energized conductors.
- Appropriate containers (e.g., canvas, hot stick boxes or canisters on trucks) shall be used to keep live-line tools, including jibs, clean, dry and protected from scars and abrasions.
- Live-line tools shall be visually inspected for defects and compliance with the test date before use each day.
- All live-line equipment shall be kept clean and waxed to preserve its insulating qualities. If a live-line tool is refinished or repaired, it shall be electrically tested before being returned to service.
- Fiberglass beams, liners and baskets on insulated aerial devices shall be kept clean, dry and maintained as a live-line tool using approved methods to preserve their insulating qualities when such equipment is used to insulate the worker.
- Cable and chain hoists shall not be used on or in close proximity of energized conductors.
- Hot line hoists shall be insulated from any path to ground when used on energized conductors above 600 volts. These hoists shall be kept clean and dry. Handles of these hoists shall be maintained as a live-line tool.
- Insulated mechanical jumpers shall be given a thorough periodic inspection. Prior to each use, they shall be given a visual inspection to check for physical damage to the insulation.

H. DENERGIZING LINES AND EQUIPMENT FOR EMPLOYEE PROTECTION

Clearances

- The employee in charge of job is responsible for obtaining and releasing clearances. The employee in charge must have a thorough understanding of the Host Company's clearance procedure. Request from the Host Company any procedure(s) that contain the general instructions for obtaining and releasing clearances and handling of electric equipment, lines, and loads. The instructions shall be studied and adhered to in all instances.
- Clearances should not be given or accepted on lines or equipment without an open-air break between all sources of supply and the line or equipment on which work is being done. Under certain circumstances, it may be impractical to obtain an open-air break. Under these circumstances specific methods and equipment, approved by the Host Employer or Management, may be used to obtain clearances. These shall be documented on the Job Briefing form and thoroughly discussed during the job briefing.
- Multiple crews working on the same line or equipment must have either a single worker in charge responsible to coordinate all activities or independently comply with the provisions of all standards that apply:

Hot line tags are important and shall be obtained according to the Host Company's policy.

- Hold Tags shall be attached to all components listed on the clearance instructions.
- Hold Tags shall not be removed without proper authorization!

I. GROUNDING FOR PROTECTION OF EMPLOYEES

Grounding of Lines and Equipment – “If it isn't grounded, it isn't dead!”

- All equipment and/or lines that are not properly cleared, tagged, tested for voltage (voltmeter or fuzzing – only above 13.2Y / 7.62 kV) and grounded are energized and shall be worked accordingly.

Note: On secondary lines operating at less than 600 volts, if it becomes impractical to begin or continue work with temporary grounds in place, the grounds may be removed, and the secondary worked without PPE provided that:

- The secondary is isolated from all source voltages
 - There is no possibility of induced voltages.
- Grounds may be temporarily removed only as necessary for test purposes. Extreme caution shall be exercised during this procedure.
- The best protection is obtained when all points in the work area are at the same potential (i.e., within an equipotential zone.) Common sense and good judgment are required in the application of system safety grounds to maintain maximum protection for workers.
- A temporary ground is used to help establish an equipotential zone (i.e., work zone of protection.) Protective grounding equipment shall be capable of handling the maximum available fault current that could flow for the time necessary to clear the fault.

- When applying a temporary ground, the ground-end connection shall be applied first, and the other end attached to the line or equipment with an approved live-line tool. When the ground is to be removed, it shall be removed from the conductor using an approved live-line tool before the ground-end connection is removed.

Note: for lines or equipment operating at 600 volts or less, insulating equipment other than live-line tools may be used if the following procedure is used.

- Before the grounds are applied to the lines or equipment, prior to de-energizing test for voltage using a voltmeter.
- After de-energizing the lines or equipment, check for the absence of voltage with the same voltmeter used above.
- Properly install grounds.
- Before the grounds are removed ensure that the lines or equipment are not energized at the time a ground is removed.
- Properly remove grounds.
- On jobs where conductors or switches are to be opened, or openings are to be closed, additional system safety grounds shall be installed in the immediate work area to bridge the opening and keep the work area at the same potential for the worker. This practice will limit the likelihood the worker will contact ungrounded points, or points at different potentials.
- The system neutral is a current carrying conductor, therefore, if the neutral is to be cut, or a broken neutral is to be spliced together, additional system safety grounds shall be installed in the immediate work area to bridge the opening and keep the work area at the same potential for the worker.
- Open wire high-line telephone lines and insulated overhead ground wires may have high-induced voltage on them and shall be worked with approved live-line tools or be properly grounded.
- If the possibility of step potential exists, workers on the ground shall wear approved rubber overshoes.
- The ground connection shall be made to one or more of the following in order of preference.

For Distribution Systems this may be:

- Common neutral,
- Permanent ground, such as driven ground or counterpoise system,
- Temporary driven grounds outside the normal work area around the pole.

The Host Employer may state a preference here.

J. UNDERGROUND ELECTRICAL (UD) INSTALLATIONS

On Underground Distribution (UD) systems the appropriate Class 0 (only for direct buried cables operating at ≤ 600 V), Class II or III rubber insulating gloves with protectors, a hardhat, safety glasses, FR clothing, and approved rubber overshoes shall be worn when:

- Opening or closing pad mounted or above ground enclosures housing direct buried cables
- Spiking cables
- Performing switching.

Notes:

- For the sole purpose of opening or closing for inspection of underground enclosures, Class II gloves are permitted up to 25 kV phase-to-phase, and Class III gloves are permitted up to 45 kV phase-to-phase.
- Caution must be exercised to determine if any abnormal condition exists, such as, a single phasing condition before opening any pad-mounted enclosure.
- The appropriate Class II or III rubber insulating gloves with protectors, shall be worn on both hands at all times when working on or when working within reach or extended reach of MADs of the direct buried cables and associated parts such as elbows and bushings energized at 25 kV or less, phase-to-phase, or 15 kV volts or less phase-to-ground, regardless of the type of work being performed. A hardhat, safety glasses, FR clothing, and approved rubber overshoes are also required to be worn.

Note:

- For voltages from 0 - 600 volts, Class "0" gloves may be worn provided all MADs are maintained at all times. (Note: Class "00" gloves are available for use under 500V) Unprotected parts of the employee's body may encroach within the MADs of such cables and associated parts. If there is likelihood that any unprotected part of the body can come into incidental contact with exposed energized parts, protective cover-up shall be installed over such cables and associated parts to prevent any incidental contact. This work may be performed only when absolutely necessary during rain, snow, mist or heavy fog.
- The neutral of a direct buried cable is part of the system neutral; thus, cannot be cut or separated without first jumping out the neutral conductor. The semi-conducting covering is a grounded sheath and is a path-to-ground.
- Exposed live parts such as live-front terminations operating above 5 kV phase-to-phase or 3 kV phase-to-ground must be worked with live-line tools.
- All previously energized primary UD cables, regardless of its condition, must be spiked with an approved spiking tool before cutting the cable.
- The energized conductor of an insulated direct buried cable shall be considered within reach or out of reach as follows:
 - With the concentric neutral and a semi-conducting covering in place, the conductor is considered out of reach.
 - With the concentric neutral removed, and the semi-conducting covering is in place, the conductor is considered within reach. With proper protective equipment in place over the semi-conducting covering, the conductor is considered out of reach.
 - With both the concentric neutral and the semi-conducting covering removed, the conductor is considered within reach. Even when adequately covered with proper protective covering and/or physical barriers, any exposed energized terminations shall be considered within reach.

Note: When making terminations to UD cables in place, exposed energized parts from 0 - 600 volts may be considered out of reach when covered with properly installed protective equipment or isolated with physical barriers.

K. DIRECT BURIED CABLES

Uncovering Cables

- Common sense and good judgment should be used when removing the dirt from energized direct buried cables. After the dirt has been removed, a visual inspection shall be made before working on these cables. Rough handling of energized direct buried cables shall be avoided. Before uncovering direct buried Underground Distribution secondary cables by hand digging, these cables shall be de-energized and grounded. Energized Underground Distribution secondary cables operating from 0 - 600 volts may be uncovered by hand digging provided that:
 - The cable route and depth are generally known.
 - The hand tool has a non-conductive handle such as fiberglass, and the workers wear, AR clothing, hardhat, protective eyewear, and approved rubber footwear. When the energized secondary cables are exposed and become within reach, Class "0" gloves with protectors may be utilized unless primary cables are also within reach – which would then require Class II or III rubber insulating gloves with protectors. Splicing and Tapping UD Secondary Cables
- Only trained and qualified workers at the jobsite may splice or tap up UD secondary cables, operating from 0 - 600 volts, energized or de-energized.

L. SUBSTATIONS

Any employee entering an attended substation, who does not regularly work in the station, shall report his or her presence to the employee in charge.

EMERGENCY ACTION PLAN

A. PURPOSE AND SCOPE

The potential exists at every workplace that natural or manmade disasters can threaten the safety of individuals working at or occupying a facility or jobsite. The goal of this program is to provide an Emergency Action Plan to effectively respond to any threat and provide protection in the event of an incident. This plan describes the basic management procedures that are to be followed during emergencies. It also addresses the requirements for Emergency action plans as identified in General Industry 1910.38 and Construction 1926.35 as well as offers specific actions that are to be taken in response to various emergencies. This Emergency Action Plan shall be kept in the workplace, and available to all employees for review.

B. RESPONSIBILITIES

The response to an incident is both event and location specific. The responsibilities that follow are fundamental to the success of any Emergency Response Plan. OlympiaTech may have several representative individuals for each of the following titles at a given location. Depending on the size of the jobsite or location, multiple individuals for each title may share responsibility. These individuals will be identified to the host and/or general contractor at the pre-job meeting and to employees before the job begins.

Safety Director

The Safety Director will:

- Contact Emergency Medical Services (EMS), internal and/or external Emergency Response Units, and/or law enforcement agencies, as needed and if they have not already been contacted.
- Provide communication between OlympiaTech, Host Employer General Contractor or Construction Manager and EMS, internal or external Emergency Response Units, and/or law enforcement agencies, as needed.
- Notify the Management of the emergency, and of any actions taken.
- Respond to an incident as instructed by Management
- Provide information to others affected by the emergency (property owners, contractors, etc.) regarding emergency and evacuation procedures, evacuation routes and assembly area(s).
- Interface with all contractors to ensure coordination of their emergency response procedures with this Emergency Response Plan.

Management

The Management will:

- Authorize the Safety Director to serve as the Emergency Response Coordinator. Provide a list of back-up coordinators if the emergency will impact evening and night operations.
- Assess the situation(s) and determine the level(s) of response necessary.

- Consult with the Safety Director and site supervisor, as needed, to assist in the assessment.
- Evaluate the data provided by the Safety Director regarding the situation.
- Provide authorization to respond, including, but not limited to, evacuation of additional areas, buildings, etc. in the vicinity, as needed.
- Establish an Emergency Operations Center (EOC) or determine if one has been established for the jobsite.
- Appoint an Incident Commander to manage the EOC or assign a company representative to the EOC if it has been established by others.
- Designate a Public Relations Officer or spokesperson for OlympiaTech and inform him/her of the emergency and any actions taken.

Public Relations (or Designated Spokesperson)

The Public Relations Spokesperson will:

- Serves as the contact and provide communication to the media and other public agencies regarding the emergency.

Supervisor

The Supervisor will:

- Provide instructions to employees on actions to take when an emergency occurs, notification to emergency responders, evacuation procedures and routes and assembly area(s).
- Coordinate emergency and evacuation procedures, evacuation routes and assembly area(s) with others on site.
- Make sure employees and visitors exit the site/ building, and meet at the prearranged assembly area(s) during an evacuation
- Be responsible for conducting head-counts to account for all employees, contractors and visitors.
- Assist Management, the Safety Director and Public
- Relations with communications, as requested.
- Provide technical support on site based on the emergency to handle jobsite or building systems controls, as necessary.
- Assist with crowd control during evacuation. (As designated by the Safety Director)

Designated employees will:

- Assist in the evacuation of buildings (i.e. assist the handicapped, check rooms to ensure all have exited as long as it is safe to do so.)
- In the event of a bomb threat, assist in conducting a sweep of the jobsite, building areas or buildings, as directed by the Safety Director and response teams. Note: Employees familiar with the search area may often provide the best assistance to Safety Director and/or search teams in identifying unusual objects that do not belong in the search area.

Visitors/Contractors

- In an emergency, individual employees are responsible for the safety of their visitors. If an individual is visiting you, you are to provide assistance to the visitor regarding emergency procedures and evacuation routes. The Safety Director will work with all contractors to ensure coordination of their emergency procedures with this Emergency Action Plan.

C. EMERGENCY REPORTING AND NOTIFICATION PROCEDURES

- Emergency (life safety, fire and other disasters) reporting for all jobsites shall be the 911 system unless other emergency services have been designated for your specific location, as indicated below. When using 911, details of the incident will be provided to the dispatcher. They will ensure appropriate services such as Emergency Medical Services, Fire and Police, respond. Each location/jobsite will have an emergency notification system to make all employees aware of any incidents. At some locations a public address (PA) system is installed to provide information and emergency broadcast announcements.
 - Location Specific Reporting Instructions
 - Safety Coordinator:
 - Notification Procedures:
 - Phone Number: 911 or Employee Emergency
 - Other:

Individuals calling in an emergency will:

- State the location (i.e. jobsite address or descriptors, building and floor and location on the jobsite, floor and/or room).
- Identify the type of situation requiring emergency assistance.
- Employees are directed to address personal safety first. Calls should be made only when it is safe to do so. Procedures for specific threats are contained in this program.
- Emergency Alarm/Employee Notification
- The following system(s) are available at the jobsite/work- place to notify personnel of an emergency situation:
 - Alarm Bell/Siren
 - Voce Broadcast/Bullhorn

Evacuation Procedures for Critical Plant Operations Employees

- Safety is a top priority at OlympiaTech , and there are no critical operations worth risking one's welfare to perform. If believed a job has critical operations requiring one or more employees to remain in the building during an evacuation (this should be a rare occurrence), OlympiaTech shall develop a specific plan of action.
- If employees are unable to leave a building that is being evacuated to maintain critical processes that will create an increased hazard if left unattended, or employee is injured or trapped, attempt to alert someone evacuating the building of your inability to leave.

- Advise them of your name, department, and room number or location. Make sure they understand to advise the Supervisor for Emergency Conditions of the situation.
- Take steps to reduce your exposure to additional risks posed by remaining in the building. If employee is able to shut down or control critical processes, and subsequently evacuate, do so immediately. If employee is injured or trapped remain where you are, unless in life threatening danger, so that rescue can be attempted by emergency responders alerted to your location.
- No one can require anyone to remain inside a building that is being evacuated.
- When evacuation is necessary individuals will leave by means of the nearest exit using escape routes as designated by the supervisor and assemble at the pre-designated meeting areas.

E. SHELTER-IN-PLACE

Depending on the emergency (tornado, biological or chemical attack or civil disturbance), evacuation or in- place sheltering may be necessary. The supervisor shall identify “shelter in place” locations for employees to respond accordingly to alarms/emergency notifications based on the emergency procedures in this plan.

F. TRAINING

General

- The Safety Director reviews the Emergency Response Plan with management. Supervisors train their employees to ensure they have a thorough understanding of the Emergency Response Plan. New employees receive training during their first day of employment.

Special

- Personnel assigned to special tasks associated with a given emergency receive training regarding the hazards, control measures and their responsibilities in emergency response and assisting in safe and orderly evacuation of other employees. Only employees who are trained in the use of fire extinguishers are directed to use them. All other personnel must evacuate buildings or follow the instructions of emergency response personnel.

Practice

- The Safety Director will coordinate with appropriate outside emergency services and the local Fire Department to schedule evacuation exercises and fire drills.

G. MEDICAL EMERGENCY

If someone requires emergency medical attention, EMS is contacted per the Emergency Reporting and Notification Procedures. The Safety Director is notified as soon as possible once the immediate needs of the victim are managed. Training on the availability and location of defibrillators as well trained operators shall be provided as part of the emergency response plan training. Individuals will not attempt to move an individual in need unless trained in First Aid/CPR training and/or the victim is in greater danger if not moved.

H. ELEVATOR ENTRAPMENT

- Various types of elevators may be found on any jobsite. The following provides our company procedures in the event employees are trapped in one.
- Where available a button next to the telephone symbol/icon located on the call plate may be used to automatically call building operations or security personnel.
- Where available a telephone receiver or a panel marked with a telephone will providing access to a receiver may be used to automatically call building operations or security personnel.
- Callers will provide the responder with the elevator and floor it has stopped. Callers will stay on the phone and await further instructions. Procedures for elevators that do not have communication devices are as follows; remain calm, be patient for someone to notice the elevator is malfunctioning and call aloud for help in a loud voice to alert passers-by and/or responders. In all cases qualified persons shall respond and assist. Trapped individuals should remain in the elevator unless specifically directed to attempt escape.

I. FLOODING

- The Safety Director shall be notified of any flooding on the jobsite. The Safety Director will arrange to have the water supply shut off and to send qualified personnel to respond and provide assistance.
- If possible, and if it can be done safely, disconnect all electrical equipment. If the source of water is overhead and time will allow, the affected area will be cleared to minimize water damage.

J. POWER OUTAGE

- When work is performed in areas where power is normally provided and a power outage occurs, the Safety Director shall be notified due to the threat of fire. A visual inspection of the area will be conducted to rule out fire (electrical or otherwise) as the cause of the outage. Where emergency lighting allows and/or flashlights are available an evacuation of the building or area shall occur.

K. FIRE & EXPLOSION

- On job sites where a fire alarms stem is in place, notification of a fire shall be provided through activation of the system by smoke, fire or a pulled alarm.
- When an alarm is activated, everyone shall exit the buildings immediately via the appropriate exit-way.
- When a fire has been observed and the alarm system has not been activated, employees shall exit the immediate area. As soon as it is safe, they will pull an alarm or follow the instructions in the Emergency Reporting and Notification Procedures.
- Where they exist, doors shall be closed behind exiting employees to delay the spread of the fire.
- Employees shall move to the safe area 200 feet from the building as identified by the supervisor before the job began.

- A headcount will be taken by managers and supervisors to ensure everyone has exited.
- Employees shall remain in the safe area until further instructions are provided by the Supervisor, Safety Director or other authority assigned to the area.

L. BOMB THREAT

- Employees shall immediately report suspicious object or parcel or bomb threats to their Supervisor or the Safety Director. Suspicious packages shall be identified as having some of the following characteristics:
- Protruding wires, aluminum foil, oil stains and/or emit a peculiar odor.
- Address labels that display restricted endorsements (PERSONAL or PRIVATE.)
- Address labels that are: handmade, written with distorted handwriting or made with cut and paste lettering.
- Address labels that contain inaccuracies in the addressee's name and/or title.
- Display a return address or the return address may be fictitious.
- Having excessive postage.
- Wrapped unprofessionally and irregular shapes, bulges or soft spots in the form of a letter bomb, usually feel rigid and appear uneven or lopsided.

Suspicious Parcel or Object

- When a suspicious parcel or object is identified, it shall:
- Not be touched or moved.
- Be isolated and, if possible the area evacuated.
- Kept away from others

Information about the package who handled it, when/ where it was discovered, etc. shall be noted and provided to the safety director or responding agency. Information about the package shall not be shared with any other individuals.

Verbal Telephone Threats

When a verbal telephone threat is received, the following actions are taken:

- The caller shall be kept on the line as long as possible so that you can gather more information. A record of the words spoken by the caller should be kept. If caller identification is available, the caller's phone number shall be recorded.
- If the caller does not indicate the location of the bomb or the time of possible detonation, the employee on the line shall request this information.
- Attention shall be given to background noises such as motors running, music or any other noise, which may give an indication as to the location of the caller.
- The voice (male/female), voice quality (calm/excited), accents or speech impediments, and approximate age (young or old) shall be noted.

- The Safety Director shall be notified immediately of any bomb threats. The person who received the call, he/she shall remain available until the Safety Director arrives. In some instances, the individual who received the call may be asked to meet with Safety Director at another location. Evacuation of the area shall be determined by the Safety Director or law enforcement.

Written Threats

Employees shall respond to written bomb threats as follows:

- Immediately notify Safety Director upon receipt of a threat.
- Promptly write down everything about the threat (i.e., location, room, area, wall, floor, etc.)
- Remain calm and do not discuss the threat with others.
- Save all materials, including envelopes or containers. Once the message is recognized as a bomb threat, further unnecessary handling should be avoided.

The Safety Director will notify appropriate law enforcement and management.

M. CHEMICAL EMERGENCIES

There are two types of chemical emergencies that can occur; a chemical leak or chemical attack. A chemical attack is the deliberate release of a toxic or unknown gas, liquid or solid that can poison people and/or the environment. This can be associated with a terrorist act. A chemical leak is associated with a malfunction of a system or activity, such as a traffic accident near a jobsite involving a chemical tanker truck. The following addresses common emergencies or basic procedures to approach hazardous chemicals should there be a release on the jobsite or in the workplace.

Chemical Leak - Natural Gas Leak

Leaks can occur on indoor lines or when outdoor lines are damaged. In the event of a natural gas leak the following procedures shall be followed which are identified by the three R's: Recognize, React, and Report.

Recognize

- In its natural state, natural gas is colorless and odorless. Utility companies add a distinctive odor of rotten eggs, to make even the smallest leaks easier to detect. You should smell this odor when a leak occurs. Other signs of a leak include a blowing or hissing sound, dead or discolored vegetation in an otherwise green area, flames (if a leak has ignited), dirt or dust blowing from a hole in the ground and/or bubbling in wet or flooded areas.

React

- Assess the immediate threat to human life if a fire or explosion were to occur
- Evacuate the area as needed by providing verbal instructions and move 200 feet away from the area of the leak or the building. When in doubt about the level and possible threat, evacuate.
- TURN OFF AND DO NOT USE cellular phones, radios, pagers.
- DO NOT TURN ON/OFF flashlights, lights, alarms, electrical equipment, elevators or other devices capable of producing static electricity, sparks, arcs or open flame.

- If possible, stay away from carpeted areas to avoid sparks of static electricity.
- Do not start vehicles.

Report

- When you are away from the gas leak contact your
- Supervisor or the Safety Director.
- Safety Director will notify Building Operations or the gas company, as appropriate.

Chemical Attack

Typically notification of a terrorist act will come through local law enforcement agencies. Actions described below offer procedures to follow in the event of a threat. A chemical attack may occur without advance warning. Signs of a chemical attack include many people suffering from watery eyes, twitching, choking, difficulty breathing or losing coordination. Many sick or dead birds, fish or other small animals are also cause for suspicion. The following also provides procedures to follow when an incident occurs without warning.

If a threat of a chemical attack is received, the Safety Director will notify law enforcement.

If necessary and time allows for a safe evacuation of the jobsite, law enforcement will make the decision. Supervisors will be contacted regarding the evacuation.

If time does not permit a safe evacuation or an evacuation would require individuals to pass through contaminated areas, supervisors will be contacted to instruct employees, other contractors and visitors where to seek shelter. Follow the procedures for in place sheltering as provided below. Depending upon the security considerations, the PA system may or may not be used.

Supervisors or their designees will take the lead and ensure exterior doors/windows and air vents are closed as quickly as possible.

Staff assigned to the building will turn off all fans and heating and air conditioning systems. Some systems automatically provide for exchange of inside air with outside air. These systems, in particular, need to be turned off, sealed and/or disabled.

If informed there is a possibility or danger of explosion, close the window shades, blinds or curtains as appropriate.

All individuals will be directed to gather whatever essential disaster supplies are available in the building from offices, custodial closets, etc. This includes items such as nonperishable food, bottled water, battery-powered radios, first-aid supplies, flashlights, batteries, duct tape, plastic sheeting and plastic garbage bags.

Select interior room(s) above ground floor with the fewest windows or vents. Room(s) should have adequate space for everyone to be able to sit. Avoid overcrowding by selecting several rooms, if necessary. Large storage closets, utility rooms, pantries, copy and conference rooms without exterior windows will work well. Avoid selecting a room with mechanical equipment like ventilation blowers or pipes. This equipment may not be able to be sealed from the outdoors.

It is ideal to have a hard-wired telephone in the room(s) you select. Call emergency contacts and have the phone available if you need to report a life threatening condition. Cellular telephone equipment may be overwhelmed or damaged during an emergency.

Take emergency supplies and go into the room you have designated. Seal all windows, doors, and vents with plastic sheeting and duct tape or anything else you have on hand. Do not cover glass, just joints.

Write down the names of everyone in the room. Call the Safety Director with this information.

The Safety Director will monitor law enforcement communications as well as local radio and television or use the Internet. The law enforcement will be kept apprised of the situation and provide further instructions. Wait at your location until you are told all is safe or to evacuate.

Spill Containment Plan

The purpose of this spill containment plan is to inform employee(s) about the hazards associated with the unexpected release of Hazardous Substance(s) (HS) in the areas where personnel are performing tasks. Safety Data Sheets (SDS) for the chemicals commonly used by employees in the performance of their duties and responsibilities should be readily accessible. By being aware of the potential of accidental release of these and other chemicals, we can eliminate or minimize any exposure to personnel or the environment. During the course of each day, employees may be exposed to chemicals used by other contractors and plants where work is being performed and each employee must be familiar with the Hazard Communication Plan for each jobsite where their work is performed.

- Each Site Superintendent, Foreman or Lead Electrician must review drawings or other information provided by the Owner, General Contractor, Project Coordinator or other interested party about the location, labeling, handling procedures and contact information of the responsible party for the chemicals known to be present onsite where work is to be performed.
- Each Employee shall be given the proper information concerning any exposure from the chemicals known to be present and the proper abatement procedures, should any release occur. This includes notification to plant personnel, signs and symptoms of exposures, visual and audible warning signals and the proper Personal Protective Equipment needed for safe handling.
- Every employee onsite must be familiar with the location of any spill response kits, drains, plant emergency contact information, and proper egress from areas where chemicals may be used, stored, loaded or unloaded.
- Preventive measures include:
 - Employees properly trained to reduce the number of human errors that contribute to spills.
 - Visual inspections prior to commencing work for any signs of spills or leakage from any hazardous substances that may be present in the work area.
 - Methods and procedures available for the containment of any release of hazardous substances.

- Placement of temporary liners or absorbent material prior to the use or transfer of any hazardous substance for containment purposes.
- Locations of nearest communication interface for summoning Emergency Personnel and the nearest medical facility, should medical attention be necessary.

Response Actions in Case of Spill

- If safe to do so, control the source to prevent further spillage.
- Cover and/or block any and all drains in the spill area to prevent material from entering sewer, storm-water or septic systems.
- Notify emergency contact and/or plant personnel per site procedures.
- Fire/Rescue: 911 or local number

Plant Emergency Contact

- Use absorbent material to contain the spill, (Dry Litter, Absorbent pads or Synthetic Absorbents)
- Secure the site from unauthorized person(s) to prevent unnecessary exposures.
- If safe to do so and the spill is minimal, clean up the spill and treat it as hazardous. Store in an approved container for proper disposal per approved procedures. If spill is too large, contact the appropriate emergency response agencies for assistance.
- Report the spill to proper authorities or appropriate agencies.

Local Authority_____

Other Specific Agency: _____

Spill Reporting

As soon as practical, please forward the following information to the plant contact individual, company safety supervisor and/or owner for the proper reporting of accidental spillage and/or release of hazardous substances.

- Location of the spill and time it was discovered.
- Material or substance released in the spill.
- Cause of the spill or release.
- Description of the containment area and the methods used to contain the spillage.
- Estimate amount of volume released.
- List of personnel exposed during the spill, containment and cleanup, if applicable.
- Weather conditions
- Procedures for preventing future release and spill- age of the material involved.

N. EARTHQUAKE

The following procedures shall be followed in the event of an earthquake.

Stay inside until the shaking stops and it is safe to go outside. Most injuries during earthquakes occur when people are hit by falling objects when entering or exiting buildings.

Drop, Cover and Hold On! Minimize your movements during an earthquake to a few steps to a nearby safe place.

If you are indoors, take cover under a sturdy desk, table or bench, or against an inside wall, and hold on. Stay away from glass, windows, outside doors or walls and anything that could fall, such as lighting fixtures, wall hangings or furniture.

If there isn't a table or desk near you, cover your face and head with your arms and crouch in an inside corner of the building. Doorways should only be used for shelter if they are in close proximity to you and if you know that it is a strongly supported load-bearing doorway.

If you are outdoors, stay there. Move away from buildings, streetlights and utility wires.

If you become trapped in debris:

- Do not light a match.
- Do not move about or kick up dust.
- Cover your mouth with a handkerchief or clothing.
- Tap on a pipe or wall so rescuers can locate you.
- Use a whistle if one is available. Shout only as a last resort - shouting can cause you to inhale dangerous amounts of dust.

If you must go out after an earthquake watch for fallen objects, downed electrical wires, weakened walls, bridges, roads and sidewalks.

Be prepared for aftershocks. These secondary shock waves are usually less violent than the main quake but can be strong enough to do additional damage to weakened structures.

If the electricity goes out, use flashlights or battery powered lanterns. Do not use candles, matches or open flames indoors after the earthquake because of possible gas leaks.

Evacuate buildings if fumes are detected and the building is not well ventilated.

O. TORNADO

A tornado is a violently rotating column of air extending from a thunderstorm to the ground. They are most likely to occur during the spring and summer months between 3 p.m. and 9 p.m., but can occur at any time of day or night and at any time of the year. When conditions are right for a tornado the National Weather service will issue a Tornado Watch. This means tornadoes are possible. If they issue a Tornado Warning, a tornado has been sighted or indicated by weather radar.

Tornado Watch Procedures

In the event of a tornado watch, remember the following:

- The Safety Director will monitor NOAA Weather Radio and commercial radio or television news- casts for the latest information and keep law enforcement apprised of conditions.
- If necessary, the law enforcement will close the affected facility (or facilities). Building occupants will be notified what to do over the PA system. If a PA system is not available, supervisors will be contacted to notify employees, other contractors and visitors of the closure and what to do.
- In the event time does not permit a safe evacuation, building occupants are to seek safe shelter.

Tornado Warning Procedures

In the event of a tornado warning, remember the following:

- When a tornado has been sighted, seek shelter immediately.
- Seek shelter in buildings as listed below.
- If you are in a building without a basement, go to an interior room on the lower level (closets, interior hallways). Put as many walls as possible between you and the outside. Get under a sturdy table and use arms to protect head and neck. Stay there until the danger has passed.
- Stay away from windows, doors and outside walls.
- Go to the center of the room. Stay away from corners because they attract debris.
- If caught outside with no shelter, lie flat in a nearby ditch or depression and cover your head with your hands. Be aware of the potential for flooding.

Typical locations that offer a good shelter in place for tornadoes are: basements, hallways, corridors, and internal break rooms. Places to avoid include lobbies, near windows, away from large overhanging fixtures, etc.

P. HURRICANE PREPAREDNESS PLAN

Hurricane/Typhoon:

A storm or cyclone in which the maximum sustained surface wind is 74 mph (119 km/hr) or more. The term hurricane is used for Northern Hemisphere tropical cyclones east of the International Dateline to the Greenwich Meridian. The term typhoon is used for Pacific tropical cyclones north of the Equator west of the International Dateline. It is important to know the difference between a Hurricane Warning where winds in excess of 74 mph are expected within 36 hours and a Hurricane Watch where winds are possible within 48 hours of announcement.

When a Hurricane Watch is announced, take preliminary precautions and prepare to follow instructions in the event a Hurricane Warning is issued. These include:

- Plan evacuation route for personnel, be site specific

- Contact your local Emergency Management Office or American Red Cross for community hurricane preparedness plan
- Maintain vehicles with fuel for evacuation
- Maintain supplies for personnel to include:
 - Flashlights and batteries
 - Portable radio and batteries
 - First-Aid kit
 - Drinking Water and non-perishable food supplies
 - Can opener (manual type)
 - Remind employees to have all medicines and prescriptions needed
 - Secure Tools, Equipment, and Vehicles remaining onsite
 - Secure all portable tools and equipment in storage units and lock for safety and security
 - Safety secure any material left onsite and exposed
 - Turn off all temporary electrical wiring to prevent damage and/or exposure to live electrical potential during the emergency.
 - Tape or protect windows with minimum 1/2" plywood
 - Ensure all tie-downs are in place and used

Follow all instructions from Emergency Management Office and State/Local Officials and Deputies responsible for the coordination and evacuation of individuals located within the Hurricane Warning/Watch region.

Q. WORKPLACE VIOLENCE

Intervention is the key to workplace violence situations. Employees shall report any pattern of behavior and attitude that causes concern to their supervisor and/or the Safety Director. The Safety Director will work with the appropriate entities to discuss procedures for diffusing the situation. For crimes in progress, violent incidents or specific threats of imminent violence employees will:

- Get to safety as quickly as possible.
- Immediately contact emergency services as provided in the Emergency Reporting and Notification Procedures. If able, use a phone out of sight and/or hearing of the individual or ask another to call for help.
- Not attempt to intervene physically or deal with the situation himself/herself. It is critical that law enforcement take charge of any incident that can or does involve physical harm.
- When making the call, stay on the line and provide the following information
 - Location
 - Your name
 - Nature of the problem

- Number of individuals involved
- Whether or not weapons are involved

Hostage Situation

If involved in a hostage situation, take the following actions:

- Immediately contact emergency services as provided in the Emergency Reporting and Notification Procedures., if possible. Supply as many details as possible including number of persons involved, description of hostage takers, weapons displayed, threats made, etc.
- Do what they are told without argument.
- Not attempt to negotiate or argue with a hostage taker.
- Try to get others to remain calm. Tell them to do what they are told.

Civil Disturbance

Any indication of a civil disturbance such as a demonstration, picketing or riot shall be reported immediately to the Safety Director.

Jobsite/building personnel should:

- Remain in the building and/or on the jobsite away from the disturbance area, unless instructed to do otherwise, stay away from windows,
- Avoid confrontation with demonstrators, picketers or rioters,
- Leave telephones clear in case contact is necessary.
- It may be necessary to lock exterior doors.
- Safety Director will arrange for escorts to enter or exit the buildings/job sites as needed.

FALL PROTECTION PROGRAM

A. PURPOSE AND SCOPE

Fall hazards are a major concern in our industry. This fall protection program has been developed to ensure that all OlympiaTech employees are protected from these hazards while working on elevated surfaces and that they comply with OSHA 29 CFR 1926 Subpart M Fall Protection.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Coordinate the type of fall protection (fixed protection systems or PPE) to be used on the jobsite with the general contractor/host/construction manager.
- Will ensure that all fall protection equipment meets required specifications for the intended use.
- Ensure that all personnel required to use fall protection equipment have been medically qualified and trained in the proper use of the equipment.
- Ensure that a qualified person develops the site specific fall protection plan and maintain at the job site under the supervision of a competent person.

Supervisors

Supervisors will:

- Ensure that personal fall protection systems are used where required.
- Will inspect fall protection equipment on a weekly basis.
- Designate specific employee to work in controlled access zones. No other employee may enter controlled access zones.
 - John Lawler
 - Rob Palomo
 - Randy Edman

Employees

Employees will:

- Be trained to recognize fall hazards and the procedures to minimize these hazards.
- Use personal fall protection equipment as trained.
- Inspect their fall protection equipment before each use.
- Inform their supervisors of any conditions that may hinder their ability to work at heights or use personal fall arrest equipment.

C. INSTALLATION AND USE OF EQUIPMENT

All equipment will be installed and used in accordance with OSHA standards and the manufacturer's instructions.

The installation and use of equipment will be inspected and approved by a competent person. All equipment will be used only for the application for which it was designed.

D. FALL PROTECTION EMERGENCIES

- Potential fall emergencies will be evaluated.
- An equipment inventory will be conducted by the supervisor before each job where fall protection is required.
- The supervisor will ensure that fall protection equipment or tools are available for post-fall recovery (ladders, scaffolds, man-lifts etc.), emergency phone numbers are posted and first-aid equipment and personnel are prepared to respond to a fall emergency.
- Accident investigations will be conducted in the event of a fall, near miss, or other serious incident to determine if the fall protection plan needs to be changed and shall implement those changes as a preventative action.
- The employer shall provide for prompt rescue of employees in the event of a fall or shall assure that employees are able to rescue themselves

E. TRAINING

OlympiaTech employees will receive mandated annual training on the use of fall protection that will be documented. The training will pertain to the recognition of fall hazards and how to minimize those hazards. Training will include information on the use of fall protection equipment, inspection, installation and maintenance, OSHA Safety Standards and company procedures. Training will consist of toolbox talks and hands-on demonstrations. as needed.

Topics to be included:

- Nature of the fall hazards OlympiaTech employees may be exposed to.
- Correct procedures for erecting, maintaining, disassembling and inspecting fall protection systems.
- Use and operation of controlled access zones, guardrails, personal fall arrest systems, warning lines and safety monitoring systems.
- Role of each employee in the Safety Monitoring
- System (if one is used).
- Correct procedures for equipment and materials handling and storage and erection of overhead protection.
- Requirements of the OSHA Fall Protection Standard, 29 CFR 1926, Subpart M.
- Prompt rescue of employees in the event of a fall and in some cases assure that employees are able to rescue themselves
- Retraining will be provided if:

- It is determined that employees already trained do not have the necessary understanding of a skill.
- Work place changes
- Fall protection systems or equipment changes that render previous training obsolete
- All Retraining is documented and maintained.

F. FALL PROTECTION SYSTEMS

Covers

- All covers shall be secured to prevent accidental displacement.
- Covers shall be color-coded or bear the markings “HOLE” or “COVER”.
- Covers located in roadways shall be able to support twice the axle load of the largest vehicle that might cross them.
- Covers shall be able to support twice the weight of OlympiaTech employees, equipment and materials that might cross them.

Guardrail Systems

Each OlympiaTech employee on a horizontal or vertical walking/working surface with an unprotected side or edge which is 6 feet or more above a lower level shall be protected from falling by the use of a guardrail system, safety net or fall arrest system. Guardrail systems shall be erected at unprotected edges, ramps, runways or holes which is 6 feet or more above lower level, where it is determined by the Safety Director that erecting such systems will not cause an increased hazard to OlympiaTech employees. The following specifications will be followed in the erection of guard- rail systems.

Top rails shall be:

- At least ¼ inch in diameter (steel or plastic banding is unacceptable)
- Flagged every six (6) feet or less with a high visibility material if wire rope is used
- Inspected by the Safety Director as frequently as necessary to ensure strength and stability
- Placed forty-two (42) inches (plus or minus three (3) inches) above the walking/working level
- Adjusted to accommodate the height of stilts, if they are in use.

Mid-rails, screens, mesh, intermediate vertical members and solid panels shall be erected in accordance with the OSHA Fall Protection Standard.

Gates or removable guardrail sections shall be placed across openings of hoisting areas or holes when they are not in use to prevent access.

Personal Fall Arrest Systems

Personal fall arrest systems shall be issued to and used by OlympiaTech employees as determined by the Safety Director and may consist of anchorage, connectors, a body harness, deceleration device, lifeline or suitable combinations.

Personal fall arrest systems shall:

- Limit the maximum arresting force to 1800 pounds
- Be rigged so an employee cannot free fall more than six (6) feet or contact any lower level
- Bring an employee to a complete stop and limit the maximum deceleration distance traveled to three and a half (3 ½) feet
- Be strong enough to withstand twice the potential impact energy of an employee free falling six (6) feet (or the free fall distance permitted by the system, whichever is less)
- Be inspected prior to each use for damage and deterioration
- Be removed from service if any damaged components are detected.
- All components of a fall arrest system shall meet the specifications of the OSHA Fall Protection Standard, and shall be used in accordance with the manufacturer's instructions.
- The use of non-locking snap hooks is prohibited.
- Dee-rings and locking snap hooks shall:
 - Have a minimum tensile strength of 5000 pounds
 - Be proof-tested to a minimum tensile load of 3600 pounds without cracking, breaking or suffering permanent deformation.
- Lifelines shall be:
 - Designed, installed and used under the super- vision of the Safety Director
 - Protected against cuts and abrasions
 - Equipped with horizontal lifeline connection devices capable of locking in both directions on the lifeline when used on suspended scaffolds or similar work platforms that have horizontal lifelines that may become vertical lifelines.
 - Self-retracting lifelines and lanyards must have ropes and straps (webbing) made of synthetic fibers, and shall:
 - Sustain a minimum tensile load of 3600 pounds if they automatically limit free fall distance to two (2) feet; or
 - Must sustain a minimum tensile load of 5000 pounds where they do not limit free fall to 2', (includes rip stitch, tearing, and deforming lanyards).
 - Anchorages must support at least 5000 pounds per person attached and shall be:
 - Designed, installed, and used under the super- vision of the Safety Director
 - Capable of supporting twice the weight expected to be imposed on it
 - Independent of any anchorage used to support or suspend platforms.

Safety Monitoring Systems

In situations when no other fall protection has been implemented, the Safety Monitor shall monitor the safety of OlympiaTech employees in these work areas. The Safety Monitor shall be:

- Competent in the recognition of fall hazards
- Capable of warning workers of fall hazard dangers
- Operating on the same walking/working surfaces as OlympiaTech employees and able to see them
- Close enough to work operations to communicate orally with OlympiaTech employees
- Free of other job duties that might distract them from the monitoring function.
- No OlympiaTech employees other than those engaged in the work being performed under the Safety Monitoring System shall be allowed in the area.
- All OlympiaTech employees under a Safety Monitoring System are required to promptly comply with fall hazard warnings of the Safety Monitor.

Warning Line Systems

Warning line systems consisting of supporting stanchions and ropes, wires or chains shall be erected around all sides of roof work areas.

- Lines shall be flagged at no more than six (6) foot intervals with high-visibility materials.
- The lowest point of the line (including sag) shall be between 34 and 39 inches from the walking/working surface.
- Stanchions of warning line systems shall be capable of resisting at least 16 pounds of force.
- Ropes, wires or chains must have a minimum tensile strength of 500 pounds.
- Warning line systems shall be erected at least six (6) feet from the edge, except in areas where mechanical equipment is in use. When mechanical equipment is in use, warning line systems shall be erected at least six (6) feet from the parallel edge and at least ten (10) feet from the perpendicular edge.

FIRE PROTECTION/EXTINGUISHER PROGRAM

A. PURPOSE AND SCOPE

The goal of the Fire Protection program is to establish safety rules regarding the prevention and response to workplace fires. This written program works to create and maintain a safe work environment for OlympiaTech employees as required in

- 29 CFR 1926 Subpart F as well as 1926.50 (First Aid)
- 1926.65 (Hazardous waste/emergency response) and
- 1926.35 (Emergency action plans).

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Develop, implement and administer a site-specific fire prevention and protection program that will cover all jobsite offices and storage trailers, temporary warehousing and material lay down areas, vehicles and mobile equipment and work activities.
- Ensure firefighting equipment is installed and maintained at all jobsites, in vehicles and work areas.
- Identify fire hazards at the jobsite.
- Conduct fire safety training sessions that will include actual and potential fire hazards, causes of workplace fires and the procedure for work area inspections and hazard elimination or control.
- Supervisor
- The Supervisor will:
- Take prompt corrective actions whenever unsafe fire conditions or acts are identified.
- Inspect entire work area to ensure flammables are stored correctly and adequate fire protection is provided in all areas.

Supervisors

The Supervisors will:

- Take prompt corrective actions whenever unsafe fire conditions or acts are identified
- Inspect entire work area to ensure flammables are stored correctly and adequate fire protection is provided in all areas.

Employees

Employees will:

- Comply with all site fire prevention rules including, but not limited to, proper flammable storage.
- Know the emergency telephone number to call in case of a fire emergency.
- Report all fires immediately by way of telephone or radio and notify other nearby workers.

- Be trained to recognize potential fire hazards and the location and operation of the fire extinguisher that is located on the jobsite.

Maintain a fire-safe work area.

C. FIRE EMERGENCY NOTIFICATION PROCEDURES

- OlympiaTech Employees will be trained in the established emergency notification procedures.
- Emergency telephone numbers will be posted within each jobsite trailer that is equipped with a telephone as well as other jobsite locations such as the material lay- down areas, vehicles and mobile equipment refueling areas, personnel change trailers and work areas.
- All OlympiaTech employees will immediately report all fires by calling the project's emergency phone number.
- OlympiaTech Employees will report a fire emergency on a site radio when no telephone is located nearby.

D. PORTABLE FIRE EXTINGUISHERS

- Portable Fire Extinguishers rated for the potential hazard will be installed, maintained and inspected with monthly visual inspections and an annual maintenance check that is in accordance with 29 CFR 1926 Subpart F.

E. TEMPORARY HEATING DEVICES

- Only temporary heating devices approved by the Safety Director will be used on the jobsite. These will be operated by electricity, propane gas, LPG or steam.
- The use of kerosene, wood, or oil-fired salamanders are not permitted inside temporary buildings.
- Stoves and heaters will be properly vented and all vent pipes must have tight joints and be well supported
- Each heating device will have the following information permanently affixed to the unit:
 - Clearances
 - Ventilation
 - Fuel type and input pressure
 - Lighting, e Portable fire extinguishers will be installed on company trucks and mobile equipment.
- All portable fire extinguishers will have an attached monthly inspection tag that indicates the fire extinguisher is ready to use and fully charged.
- When a portable fire extinguisher has been discharged or found to be defective it is tagged and immediately removed from service and replaced with a fully charged extinguisher of the same type and size.
- All OlympiaTech employees that may be required to use a fire extinguisher will be trained to use the extinguisher on the type that is used on the jobsite.

- Requirements in ANSI A10.10 “Safety Requirements for Temporary and Portable Space Heating Devices and Equipment Used in the Construction Industry” will be used.

F. TRANSPORTATION AND STORAGE OF FLAMMABLE LIQUIDS

- Flammable liquids will be transported only in containers approved by a national testing laboratory. These containers will be clearly labeled to identify the contents
- Flammable liquids will be transported on the jobsite in FM approved or UL listed metal safety cans with self-closing openings.
- Drums, pails or other containers that contain or have contained a flammable liquid will be kept closed except when contents are removed or transferred.
- OSHA Standard 1926.152(b) that covers indoor storage of flammable and combustible liquids will be fully complied with.
- Temporary/portable storage tanks of 1,000 gallon maximum size will be placed at least 75 feet from buildings, construction equipment, parking lots, etc. to minimize exposure to fire involving the tank per NFPA recommendations.
- Storage tanks will be placed in a lined dike to contain spills equal to the storage capacity of the tank.
- Containers from which flammable liquids are dispensed are to be electrically grounded and will be equipped with bonding wires to complete the grounding with the vessel receiving the liquid.
- Smoking or open flames will not be permitted in flammable liquid storage areas. Signs prohibiting smoking must be posted.

G. TRAINING

- Employee training will be conducted prior to initial job start and annual thereafter and will include, but is not limited to, the following:
 - The ability to identify the causes of workplace fires
 - The procedures for workplace inspections to eliminate or control fire hazards
 - Identify and describe the three classes of fires and which type of fire extinguisher that should be selected to fight each class.
 - Describe actions that should be taken in the event of a fire, the sounding of a fire alarm and what to do when responding to a fire victim.
 - Demonstrate competence in the use of a portable fire extinguisher and how to fight a fire. Remember the “PASS” method, “P” - Pull, “A” - Aim (at the base), “S” – Squeeze (the trigger or handle) and “S”– Sweep (Side to Side) extinguishing and relighting instructions
 - Electrical power supply characteristics.

FIRST AID MEDICAL PROGRAM

A. PURPOSE AND SCOPE

The goal of the Medical/ First Aid program is to develop site-specific medical and first aid procedures that will provide OlympiaTech employees with timely and reliable emergency medical care and first aid treatment. This written program works to create and maintain a safe work environment as required in 29 CFR 1926.23 First aid and medical attention and 1926.50 Medical services and first aid, as well as those referenced in 1926.950 regarding first aid.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Formulate and implement OlympiaTech's site-specific medical and first-aid program that will be obtained from the U.S. Bureau of Mines or the American Red Cross.
- Ensure that trained individuals are on site that can provide basic first-aid treatment for non-serious injuries and illnesses and emergency treatment for serious injuries or illnesses until the employee can be placed under the care of Emergency Medical Services.
- Prepare and maintain a current and complete company medical and first aid records and logs in compliance with OSHA and State Workers' Compensation Commission.
- Ensure that first aid equipment and supplies are properly maintained.
- Ensure that first aid kits are periodically assessed to ensure the availability of adequate first aid supplies

Supervisor

The Supervisor will:

Arrange for OlympiaTech employees to attend basic and advanced first-aid and CPR training.

- Provide appropriate first-aid equipment and supplies to meet the requirements of the work and the maximum number of OlympiaTech employees on the jobsite.
- Assign light-duty work only after receiving the approval of the treating physician.

Employees

Employees will:

- Report an emergency condition (medical, fire, spill etc.) according to OlympiaTech policy.
- Know the location of on-site first aid treatment facilities.
- Know the location of first-aid kits, stretchers, eye wash stations and showers, fire extinguishers and blankets, chemical spill kits, site evacuation routes and emergency procedures.
- Immediately report work-related personal injuries or illnesses to their supervisor.

C. MEDICAL/ FIRST AID ACTIONS

- In addition to receiving First-aid, (FA) and Basic Life Support (BLS) training including Cardiopulmonary Resuscitation (CPR) and the use of an Automatic External Defibrillator (AED); OlympiaTech employees will follow company procedures when responding to a jobsite injury. This procedure is in place to help reduce the occurrence of injuries to OlympiaTech employees rushing in to assist injured coworkers. By following these steps the injured will be taken care of with no additional injuries.
- Survey the scene of the accident
 - Look at the victim, but also the entire scene of the accident
 - Check for fallen wires, toxic fumes, fire or any other hazards
- Do a primary survey of the victim
 - Is the victim in immediate danger? If not leave them where they are. If they must be moved do so as trained in basic first aid.
 - If victim is conscious ask how the injury occurred and the extent of the injuries.
 - If the victim is unconscious, check for breathing and pulse. Administer CPR and get the AED if one is available. Provide mouth to mouth resuscitation and/ or CPR if needed.
 - Call Emergency Medical Services (EMS)
 - Depending on geographic location, this maybe 911 or you may need to dial a local number.
 - Give a thorough description of the accident scene, the victim's condition and what first-aid is being given. Provide the location of the victim to the authorities and any special instructions that EMS responders may need.

D. TRAINING

- In addition to any basic or advanced first aid and BLS training given to OlympiaTech employees, they will also receive training to include, but not limited to:
 - Responding to emergency situations of the jobsite
 - Correctly transmitting information involving a medical emergency to emergency personnel
 - Knowing the correct number to call when accessing emergency personnel; If 911 is available or there is a local number.
 - Blood-borne Pathogen Training if they are a First Responder.

FITNESS FOR DUTY PROGRAM

A. PURPOSE AND SCOPE

Employees must be able to perform their job duties in a safe, secure, productive and effective manner and remain able to do so through the entire time they are working. Employees who are not fit for duty may present a safety hazard to themselves, to other employees, to OlympiaTech , or to the public. This program will provide information on fitness for duty.

B. RESPONSIBILITIES

- Employees, are responsible for:
 - Managing their health in such a way that they can safely perform their essential job functions, with or without reasonable accommodation
 - Notifying their supervisors when they are not fit for duty
 - Notifying the supervisor when they observe a coworker acting in a manner that indicates the coworker may be unfit for duty. If the supervisor's behavior is the focus of concern, an employee may inform the upper level manager or may call the Employee Health Services for further guidance.
 - Employees must notify their supervisor when taking prescription or over-the-counter medication that could impair his/her ability to work safely.
 - Employees must notify their supervisor if they are fatigued to the point of not being able to perform their work duties.
- Supervisors, are responsible for:
 - Observing the attendance, performance, and behavior of the employees they supervise.
 - For following this policy's procedures when presented with circumstances or knowledge that indicate that an employee may be unfit for duty.
 - Confidentiality of medical records
- Note: any document containing medical information about an employee is considered a medical record and is regarded as confidential. Employee Health Services will maintain medical records in a file separate from all other employee records.

C. PROCEDURES

Drug and alcohol screening for pre-employment, post-accident, or random as prescribed by the host facility will be conducted. The supervisor who receives reliable information that an employee may be unfit for duty, or through personal observation believes an employee to be unfit for duty, will validate and document the information or observations as soon as is practicable. Actions that may trigger the need to evaluate an employee's fitness for duty include, but are not limited to problems with dexterity, coordination, concentration, memory, alertness, vision, speech, inappropriate interactions with coworkers or supervisors, inappropriate reactions to criticism, or suicidal or threatening statements. The determination by a supervisor to refer an employee for a fitness for duty evaluation must involve consultation with a Human Resources representative. Supervisors requesting a fitness-for-duty evaluation

will complete a Supervisor's Observation Report and forward to Human Resources. The supervisor will present the information or observations to the employee at the earliest possible time in order to validate them and will allow the employee to explain his or her actions, or to correct any mistakes contained in the description of those actions. The supervisor will then determine whether the employee should leave the workplace immediately for safety reasons. In situations where there is a basis to think that a crime may have been committed and/or the employee is making threats to harm himself or herself or others, or is acting in a manner that is immediately dangerous to himself or herself or others, the supervisor shall contact the police. Employees being referred for a fitness for duty evaluation will be relieved of duties and placed on paid administrative leave pending completion of the evaluation and receipt of the results. Human Resources will forward documentation from the supervisor to the Medical Director for Employee Health and Wellness, who will determine what type of fitness-for-duty examination, is indicated. The decision as to which health care provider will perform the fitness-for duty evaluation will be made by the Medical Director. The employee's home department will pay the cost of a fitness-for-duty evaluation.

Employee Health and Wellness will supervisors in locating an appropriate health care provider for employees requiring a fitness for duty evaluation upon receipt of documentation from the supervisor. If an employee is found to be unfit for duty, his/her employment and pay status will be determined on a case-by-case basis in accordance with company policies and procedures. Applicable employee leave accruals will be used to cover continued approved leaves of absence from work. In all cases an employee who has been referred for a fitness-for-duty evaluation must provide documentation from the independent evaluator indicating his/her fitness for duty in order to return to work. Non-compliance with a request for a fitness-for-duty evaluation may constitute misconduct leading to disciplinary action up to and including dismissal.

D. DEFINITIONS

- Fitness for Duty - Whether an employee is physically and mentally capable of safely performing the essential functions of his/her job with or without reasonable accommodation.
- Fitness for Duty Evaluation - Evaluation by an impartial, independent health care professional with appropriate expertise in one or more of the following: medical conditions, psychological conditions, and/or conditions related to the use or abuse of alcohol or other substances.

FORKLIFT PROGRAM

A. PURPOSE AND SCOPE

The purpose of this Powered Industrial Truck Program is to protect the health and safety of all OlympiaTech . employees assigned to operate powered industrial trucks and to comply with the requirements of 29 CFR 1910.178 (Powered Industrial Trucks).

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Develop specific policies and procedures pertaining to the operation and maintenance of powered industrial trucks.
- Implement a training program based on the general principles of safe truck operation, the type of vehicle(s) being used in the workplace, the hazards of the workplace created by the use of the vehicle(s)
- Coordinate the training and performance testing of Powered industrial truck operators.
- Maintain the training certification records and performance tests of OlympiaTech . employees included in the training sessions.
- Periodically reviewing the effectiveness of the program.

Supervisor

The Supervisor will:

- Ensure that OlympiaTech . employees who operate powered industrial trucks in their departments have received appropriate training.
- Provide observations and feedback to operators to ensure safe equipment operation.
- Ensure that the vehicles under their responsibility are properly inspected and maintained in a safe operating condition.

Employees

The Employees will:

- Operate powered industrial trucks in a safe manner.
- Inspect powered industrial trucks at the beginning of each work shift and completing the appropriate inspection forms if requested
- Report equipment defects and/or maintenance needs to their supervisors immediately.

C. DEFINITION OF TERMS

The following terms are associated with the design, type and use of powered industrial trucks:

- Backrest: Supports the load when tipped back and adds stability.
- Carriage: The part of the mast where the forks and backrest are mounted.

- Counterbalance Forklifts: Designed for both indoor and outdoor use, counterbalance truck wheels as their center of gravity and can be powered by battery, propane, gasoline or diesel fuel.
- Full-tapered Forks: Forks that gradually increase in thickness from the tip of the fork all the way back to the fork's heel (rear). Full-tapered forks are used to lift lighter loads.
- Half-tapered forks: Forks that gradually increase in thickness from the tip of the fork (front) to about midway back where the blade reaches its maximum thickness. Half-tapered forks are used to lift heavier loads.
- Identification Plate: Contains information about the truck's design and capacity including information about the truck's engine, load capacity, serial number, weight and the truck's type designation. The identification plate may also contain additional information specific to that type of truck.
- Lift Cylinders: Hydraulically operated single acting cylinders used to lift the carriage.
- Load Center: The distance from the heels of the forks to the load's center of gravity.
- Mast: The mechanism on the truck that raises and lowers the load. The mast is made up of a set of tracks that house bearings and chains.
- Material Handling: Any activity that involves picking up and moving materials, parts and/or finished products.
- Powered Industrial Truck: An industrial vehicle used to carry, push, pull, lift or stack material that is powered by an electric motor or an internal combustion engine. Included are vehicles that are commonly referred to as forklift trucks, rider trucks, motorized or powered hand trucks, pallet trucks and tugs. Not included is compressed air or nonflammable compressed gas-operated industrial trucks, farm vehicles or vehicles intended primarily for earth moving or over-the-road hauling.
- Powered Pallet Jack: A type of powered industrial truck designed to move palletized materials. These trucks may be called walkies, or walkie riders.
- Order Picker: A type of truck designed to allow the operator to ride up and down the load so that individual items can be pulled from a rack or storage self.
- Overhead Guard: A guard over the operator's head that protects the operator from falling debris. Note: The overhead guard is not designed to withstand the full impact of falling objects.
- Rated Capacity: The maximum weight that the truck is designed to lift as determined by the manufacturer. To lift the maximum rated capacity, the load must be as close as possible to the drive wheels. The rated capacity of a truck can be found on the Identification Plate on the vehicle and/or in the manufacturer's operator manual.
- Side Stability: Refers to the truck's ability to resist tipping sideways under various loaded and unloaded conditions.
- Tilt Cylinders: Hydraulically operated double acting cylinders used to tilt the backrest and forks. Tilt cylinders work in both forward and backward directions.
- Type designation: Refers to the truck's power source (diesel, gas, electric or liquefied propane gas) and if the truck is equipped with any additional safeguards to the exhaust,

fuel and/or electrical systems. The designation will also indicate any locations where the truck may not be used such as in atmospheres containing flammable vapors or dusts.

The following definitions help to explain the principle of stability:

Center of Gravity is a point on an object at which all of the object's weight can be considered to be concentrated.

- Counterweight is the weight that is a part of the truck's basic structure that is used to offset the load's weight and to maximize the vehicle's resistance to tipping over.
- Fulcrum is the truck's axis of rotation when it tips over.
- Grade is a surface's slope that is usually measured as the number of feet of rise or fall over a hundred foot horizontal distance (measured as a percent).
- Lateral stability is a truck's resistance to tipping over sideways.
- Line of action is an imaginary line through an object's center of gravity.
- Load center is the horizontal distance from the load's edge (or the fork's or other attachment's vertical face) to the line of action through the load's center of gravity.
- Longitudinal stability is the truck's resistance to overturning forward or rearward.
- Moment is the product of the object's weight times the distance from a fixed point. In the case of a powered industrial truck, the distance is measured from the point that the truck will tip over to the object's line of action. The distance is always measured perpendicular to the line of action.
- Track is the distance between wheels on the vehicle's same axle.
- Wheelbase is the distance between the centerline of the vehicle's front and rear wheels.

D. POWERED INDUSTRIAL TRUCK RULES FOR SAFETY

The following is a list of safety rules pertaining to the operation of a powered industrial truck.

Truck Operations:

- A safe distance will be maintained from the edge of ramps or platforms while on any elevated dock, platform or freight car.
- When leaving the truck unattended, the forks will be fully lowered the controls placed in neutral, the power shut off, the brakes set to and the key or connector plug removed. The wheels will be blocked if the truck is parked on an incline. Note: A powered industrial truck is considered unattended when the operator is 25 feet or more away from the vehicle which remains in his/her view or whenever the operator leaves the vehicle and the truck is not in view.
- When the operator of an industrial truck is dismounted and within 25 ft. of the truck still in his view, the load engaging means shall be fully lowered, controls neutralized, and the brakes set to prevent movement.
- Trucks will not be used to open or close freight doors.
- The brakes of trucks, trailers and railroad cars will be set and wheel chocks or stops will be in place to prevent movement during loading or unloading operations. Fixed jacks may

be necessary to support a semi-trailer during loading or unloading when the trailer is not coupled to a tractor. The flooring of trucks, trailers and railroad cars will be checked by the operator for breaks and weakness before driving these vehicles into these surfaces.

- An overhead guard will be used as a protection against falling objects. Note: The overhead guard is intended to offer protection from the impact of small packages, boxes or bagged materials only.
- A load backrest extension will be used whenever necessary to minimize the possibility of the load or part of the load from falling rearward.
- Fire doors, access to stairways, fire extinguishers and emergency exits will always be kept clear.
- Only approved industrial trucks will be used in hazardous conditions.
- Powered industrial trucks will not be driven up to anyone standing in front of a bench or other fixed object.
- No person will be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.
- Passengers are not permitted to ride on powered industrial trucks unless authorized and the truck is equipped with a safe place for the passenger to ride.
- The operator will never place his/her arms or legs between the uprights of the mast or outside the running lines of the truck.
- The operator will never push one load with another load.
- Spinner knobs must not be attached to the steering handwheels of trucks not originally equipped with such knobs.
- Never lift people on the forks of a powered industrial truck unless the truck has a properly designed safety platform securely attached to the lifting carriage and/or forks. If the truck is equipped with vertical controls only, or vertical and horizontal controls elevatable with the lifting carriage or forks, means will be provided whereby personnel on the platform can shut off power to the truck. Protection from falling objects as indicated necessary by the operating conditions will also be provided.
- Safety platforms, firmly secured to the lifting carriage and/or forks, shall be used.

E. TRAVELING

- Traffic regulations will be observed, including observing all STOP SIGNS and authorized plant speed limits.
- A safe distance of approximately three truck lengths from the truck ahead will be maintained whenever possible.
- The "Right of Way" will be yielded to ambulances or other vehicles in emergency situations.
- The operator will slow down and sound the horn at intersections and other locations where vision is obstructed.

- If the load being carried obstructs forward view, the operator will travel in reverse with the load trailing.
- Railroad tracks will be crossed diagonally whenever possible. Parking closer than 8 feet from the center of railroad tracks is prohibited.
- Grades will be ascended or descended slowly. When ascending or descending grades in excess of 10 percent, loaded trucks will be driven with the load upgrade. Unloaded trucks will be operated on all grades with the load engaging means downgrade. On all grades, the load and load engaging means will be tilted back and raised only as far as necessary to clear the road surface.
- The operator will slow down for wet and slippery floors.
- Dock boards or bridge plates will be properly secured before they are driven over and their rated capacity will never be exceeded. Dock boards or bridge plates will always be driven over carefully and slowly.
- Elevators will be approached slowly and then entered squarely after the elevator car is properly leveled. Once on the elevator, the transmission will be in neutral, the engine shut off and the brakes set to prevent movement.
- Motorized hand trucks must always enter elevators with the load end forward.
- When making turns, the operator will reduce the truck's speed to a safe level by means of turning the hand steering wheel in a smooth, sweeping motion. Except when maneuvering at a very low speed, the hand steering wheel shall be turned at a moderate, even rate.
- Other trucks traveling in the same direction or at intersections, blind spots or other dangerous locations will not be passed.
- Horseplay and stunt driving, including spinning of the tires, is not permitted.
- Running over loose objects in aisle ways will be avoided.
- Under all travel conditions, the truck will be operated at a speed that will permit the truck to be brought to a stop in a safe manner.
- The operator will always look in the direction of travel and keep a clear view of the path of travel.
- Railroad tracks will be crossed diagonally whenever possible.

F. LOADING STAFFING

- Only stable and safely arranged loads will be handled. Use extreme caution when handling off-centered loads that cannot be centered on the forks.
- Only loads within the rated capacity of the truck will be handled.
- The forks will be placed under the load as far as possible and the mast carefully tilted backward to stabilize the load.
- Extreme care will be used when tilting the load forward or backward especially when high tiering. Tilting forward with load engaging means elevated shall be prohibited except to pick up a load. An elevated load will not be tilted forward except when the load is in a deposit position over a rack or stack of material.

- When stacking or tiering loads, the operator will tilt the load backward only enough to stabilize the load.
- The operator will remove unsafe containers and pallets from service.
- Trucks equipped with attachments will be operated as a partially loaded truck when not handling a load.
- The operator will adjust long and high loads, including multiple-tiered loads that may affect the capacity of the truck.
- The operator will insure there is always a safe distance between the mast and overhead lights, pipes and sprinkler systems.

G. MAINTENANCE OF THE TRUCK

- Powered industrial trucks will be inspected before being placed in service. This inspection will be made at least daily. Trucks used on a round-the-clock basis will be inspected after each shift.
- If at any time during the driver's shift a truck is found to be in unsafe, the operator will immediately notify his/her supervisor and remove the truck from service until it has been restored to safe operating condition.
- Fuel tanks shall not be filled while the engine is running. Spillage shall be avoided.
- Spillage of excess oil or fuel will be carefully cleaned up and disposed off in accordance with state and federal regulations. Appropriate authorities will be notified if required by law. Fuel cap must be replaced before restarting the engine.
- The operator will always wear the proper personal protective equipment when fueling the truck or performing any other maintenance on the truck.
- No repairs shall be made in class I, II, and III locations.
- No truck will be operated with a leak in the fuel system until the leak has been corrected.
- Open flames will not be used to check the electrolyte level in batteries or gasoline level in the fuel tank.
- Smoking is not allowed while changing LPG tanks, refueling gas powered trucks or changing or charging batteries for electric powered vehicles.

H. EQUIPMENT INSPECTION AND MAINTENANCE

- The operator will conduct an examination of the truck before the vehicle is placed into service. This inspection must be made at least daily. When trucks are used on a round-the-clock basis, each truck will be inspected after each shift. *The results of these inspections will be documented on a Powered Industrial Truck Inspection The operator will immediately notify his/her supervisor if the truck is found to be in need of repair and/or unsafe.
- If repairs are needed on a powered industrial truck that prevent its safe operation, the truck will be taken out of service until the repairs have been made.
- Repairs must be made by authorized personnel only.

- When the temperature of any part of any truck is found to be in excess of its normal operating temperature, the vehicle must be removed from service and not returned to service until the cause for the overheating has been eliminated.
- Any vehicle that emits hazardous sparks, flames or smoke from the exhaust system will be removed from service and not returned from service until the cause for the hazardous emissions has been corrected.
- Powered industrial trucks are to be kept in a clean condition and free of excess lint, oil, and grease. Only noncombustible agents should be used for cleaning trucks. Cleaning trucks with low flash point solvents (below 100 degrees Fahrenheit) is not permitted.
- Precautions regarding toxicity, ventilation, personal protective equipment and fire hazards are to be followed as stated on the warning label and/or the Material Safety Data Sheet (MSDS) for that particular cleaning agent.
- Parts used in any industrial truck requiring replacement will be replaced only with parts equal in safety to those parts originally provided by the manufacturer.

I. OPERATOR TRAINING

- Only OlympiaTech . employees who have successfully completed training in accordance with 1910.178(l) will be permitted to operate a powered industrial truck
- Training will consist of a combination of formal instruction (lecture, discussion videotape program written material) practical training (demonstrations performed by the trainer and practical exercises performed by the trainee, and evaluation of the operator's performance in the workplace.
- Operator training and evaluation will be conducted by persons who have the knowledge, training, and experience to train powered industrial truck operators and evaluate their competence.
- The formal (classroom) training will include a review/discussion of the following topics:
 - The factors that affect the stability of the truck.
 - The safe operation of powered industrial trucks.
 - Truck controls and instrumentation; where they are located, what they do and how they work.
 - The similarities and differences between powered industrial trucks and automobiles.
 - Steering and Maneuvering.
 - The proper techniques of battery charging and refueling.
 - The inspection of powered industrial trucks.
 - Vehicle capacity.
 - Load manipulation, stacking and unstacking.
 - Pedestrian traffic in areas where the vehicle will be operated.
 - Narrow aisles and other restricted places where the vehicle will be operated.

- Other unique and potentially hazardous environmental conditions in the workplace that could affect the safe operation of the vehicle.
- Refresher training in relevant topics will be provided to the operator when:
 - The operator has been observed to operate the vehicle in an unsafe manner.
 - The operator has been involved in an accident or near-miss incident.
 - The operator has received an evaluation that reveals that the operator is not operating the truck safely.
 - The operator is assigned to drive a different type of truck.
- A condition in the workplace changes in a manner that could affect the safe operation of the truck.
- An evaluation of each PIT operator's performance will be conducted at least once every three years.
- If an operator has previously received training in a topic specified in paragraph 29 CFR 1910.178, and the training is appropriate to the truck and working conditions encountered, additional training in that topic is not required if the operator has been evaluated and found competent to operate the truck safely.
- Training will be documented on the Powered Industrial Trucks. The certification will contain each employee's name, the date of training and the name of the instructor.

J. PROGRAM REVIEW

- The (Position designated) will review and evaluate the effectiveness of this program when any of the following occurs:
 - On an annual basis using the Powered Industrial Truck Safety Checklist provided in Appendix D.
 - When changes occur to the OSHA Powered Industrial Truck Standard that require a revision to this program.
 - When changes occur to related procedures that require a revision.
 - When facility operational changes occur that require a revision.
 - When there is an accident or near miss that relates to this area of safety

GENERAL WASTE MANAGEMENT PROGRAM

A. PURPOSE AND SCOPE

This General Waste Management Plan is designed by OlympiaTech to be adhered to by all subcontractors, along with OlympiaTech and other jobsite personnel during the construction of this project. OlympiaTech will implement, discuss goals and issues as part of subcontractor coordination meetings, and document this plan through the course of construction activities.

B. PROJECT GOALS

The goals for this project shall meet the requirements set forth by The Host to recycle or salvage a minimum of 75 percent (by weight) of non-hazardous construction waste. In order to help achieve these goals, OlympiaTech will provide a cost analysis for recycling and separating the following waste materials (versus land filling):

- Cardboard
- Clean dimensional wood
- Beverage and food containers
- Brick and CMU
- Ferrous and non-ferrous metals
- Recyclable Plastic Gypsum wallboard
- Asphalt and concrete paving
- Ceiling Tile
- Carpeting
- Existing Windows
- Used equipment oil
- All other waste materials, not listed above, will be handled as general refuse and disposed of at a licensed and permitted landfill.

C. IMPLEMENTATION

Waste Determination

Each work site will estimate the waste trash and scrap that will be generated and taken into consideration prior to work being performed so the need for waste disposal and removal can be organized and predetermined. OlympiaTech employees must coordinate with the host employer to ensure proper method to dispose of waste and scrap material. Employees shall be instructed on managing waste generated at the work site and on the proper disposal methods of wastes.

- Examples Include:
 - Instruction of the proper handling, storage, organization and disposal of wastes and depending on the waste generated at the site to also include general instruction on disposal of non-hazardous wastes, trash or scrap materials.

- If wastes generated are classified as hazardous then employees shall be trained to ensure proper disposal and compliance with regulations
- Recycling
 - The collection of recycled material will reduce the total load of the environment.
 - OlympiaTech employees will encourage proper segregation of waste materials to ensure opportunities for reuse or recycling at each site
 - Wastes should be recycled whenever possible.
- Waste Management Plan

This waste management plan will be distributed to all employees and subcontractors working on this project. OlympiaTech will discuss goals and handling procedures of the waste generated with its employees and subcontractors during coordination meetings. The project's first coordination meeting will provide an orientation discussion of the Construction Waste Management Plan. Items that will be discussed at this orientation will be as follows:

 - Plan requirements
 - A review of waste handling procedures
 - Location of dumpsters/bins
 - Waste segregation requirements
 - Discussion regarding cross contamination of waste
 - Discussion regarding responsibility of moving waste from the building to applicable bins
 - Enforcement requirements
 - Open discussion for suggestions/comments regarding effectiveness of plan. The management staff will determine what type of waste will most likely be generated in the immediate future and instruct the subcontractors as to where it shall be placed for recycling, salvaged, or to be disposed. A waste management log or cost analysis will be maintained monthly by OlympiaTech. It will list the materials recycled, the weight of these materials, and cost analysis from reusing or recycling materials.

HAND POWER TOOLS PROGRAM

A. PURPOSE AND SCOPE

The goal of the Hand and Power Tools program is to reduce the number of tool related injuries. This can be accomplished by using the correct tool, using that tool correctly and proper tool maintenance. The following program outlines how OlympiaTech will accomplish this objective. This policy covers all potential workplace exposures involving tools and machines as defined by 29 CFR 1926 Subpart I and 29CFR 1910 Subparts O and P.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Will ensure all OlympiaTech employees are trained on the proper use of hand and power tools and never assume “everybody knows how”.
- Designate proper storage facilities for all tools in the tool room or on the jobsite.

Supervisor

The Supervisor will:

- Ensure any damaged or defective hand or power tools are immediately tagged and removed from service.
- Ensure that the tools are returned to the designated storage facilities when not in use.
- Inspect hand and power tools periodically.
- Only allow those OlympiaTech employees certified in the use of a Powder Actuated Tool to operate the tool for which they are certified.

Employees

Employees will:

- Use the appropriate PPE when using hand and power tools.
- Only use hand and power tools for their designed purpose.
- Inspect hand and power tools at the beginning of their shift for any defects. If any defects are found, the tool will be tagged and removed from service.
- Use guards on power tools whenever they are in place.
- Use Powder Actuated tools only if certified to use that model of tool

C. TRAINING

To ensure the safety of all OlympiaTech employees, they will be trained in the proper use of hand and power tools. This training will include but not be limited to:

- Training OlympiaTech employees to select the correct tool for a job
- Tool inspection and tagging procedures of damaged tools

- Choosing the appropriate PPE.

HAZARDOUS COMMUNICATION PROGRAM

A. PURPOSE AND SCOPE

The goal of this program is to ensure that all OlympiaTech employees receive adequate information relevant to the possible hazards that may be involved with the various hazardous substances used in OlympiaTech operations and processes. The following program outlines how this objective will be accomplished. This policy covers all potential workplace exposures involving hazardous substance as defined by federal (29 CFR 1910.1200/1926.59), state and local regulations.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Monitor this Hazard Communication program.
- Inform all employees hazards involved in non-routine tasks
- Inform employees of hazards that are associated with chemicals contained in unlabeled pipes in their work areas.
- Questions regarding this program and any information associated with it should be directed to the Safety Director.

Employees

The Employees will:

- Follow all safety procedures described in this program, consult the written program and SDSs as needed for additional safety precautions, and report all chemical container labeling issues used at the jobsite. All questions should be referred to the Safety Director or Supervisor.
- Shall not remove or deface existing labels on incoming containers of hazardous chemicals, unless the container is immediately marked with the required information.

C. HAZARD CLASSIFICATIONS

OlympiaTech does not intend to evaluate any of the hazardous substances purchased from suppliers and/ or manufacturers, but have chosen to rely upon the evaluation performed by the suppliers or by the manufacturers of the substances to satisfy the requirements for hazard classification.

- Chemicals can cause two types of hazards: Physical and Health

D. WRITTEN PROGRAM

- The written hazard communication program will be developed, implemented & maintained at each workplace
- Every company must develop a written hazard communication program that complies with the provisions of 1910.1200(e)

E. LABELS AND OTHER FORMS OR WARNING

- No container or hazardous substance will be released for use unless the container is correctly labeled and the label is legible in English.
- All chemicals in bags, drums, barrels, bottles, boxes, cans, cylinders, reaction vessels, storage tanks, or the like will be checked by the receiving department to ensure the manufacturer's label is intact, legible in English, and has not been damaged in any manner during shipment. The use & care of labels and other forms of warning are important. Any containers found to have damaged labels will be quarantined until a new label has been installed.
- All secondary containers shall be labeled. The information must include details of all chemicals that are in the referenced container.
- The label must contain a Product Identifier, a Signal Word, a Hazard Statement(s), Pictogram(s), Precautionary Statement(s) and the name, address and telephone number of the chemical manufacturer, importer other responsible party.

There are two Signal Words to be used:

- "Danger" – Most Severe Hazard
- "Warning" – Less severe than Danger

Pictograms must be in the shape of a square set at a point and have a black hazard symbol on a white background within a red frame that represent a distinct hazard. OSHA has designated nine pictograms under this standard.

Multi-employer Worksites

- At multi-employer worksites the Safety Director will offer to the site general contractor the copies of the following elements of the hazard communication program:
 - The list of chemicals at the site.
 - All SDS used at the site.
 - The physical location of the employer's HCP at the worksite
 - The name of the employer's Hazard Communication Program Administrator at the worksite
 - The site phone number of the employer's Hazard Communication Program
- Exposure to chemicals from other employers at the multi-employer worksite:
 - The Hazard Communication Program Administrator at the site will contact the following personnel to obtain information about chemicals other employers are using which affect employees at the site: Site general contractor Hazard Communication Program Administrator; or Site Safety Director; or Hazard Communication Program Administrator(s) of the other employers.
- The Hazard Communication Program Administrator will obtain the following information from the site general contractor, site safety director or other hazard communication program administrator(s):
 - A list of site chemicals for each employer to which the employees are exposed; and

- Copies of SDS sheets for chemicals to which the employees are exposed.
- The SDS and lists should be marked to indicate the employer source.
- The Hazard Communication Program Administrator will use the information obtained from the other employers to provide additional training, update the site written hazard program for employees, and ensure that other elements of the program are updated for the exposed employees

HEAT AND ILLNESS PREVENTION PROGRAM

A. PURPOSE AND SCOPE

This program is intended to serve as a guideline for OlympiaTech employees to protect themselves against the effects of heat illness and to meet Federal OSHA requirements. Heat illness is a serious medical condition resulting from the body's inability to cope with heat and to cool itself. The effect of heat illness can range from sunburn to heat exhaustion and heat stroke. The hot temperatures that Los Angeles experiences throughout the year make it imperative that all employees affected are provided with the appropriate materials and training needed to keep themselves safe. The Heat Illness Prevention Program (HIPP) is applicable to all employees who work outdoors.

B. RESPONSIBILITIES

General Manager, Assistant General Managers, and Division Managers Responsibilities are consistent with those outlined in the Injury and Illness Prevention Program (IIPP).

- Supervisors In addition to the responsibilities listed in the IIPP, supervisors are responsible for:
 - Supervisors will be trained in the employer's heat illness emergency response procedures
 - Learning and following this Heat Illness Prevention Program.
 - Providing training to their employees on how to prevent and treat heat illness.
 - Providing potable drinking water and a shaded break area for all employees covered by the Heat Illness Prevention Program.
 - Checking the temperature and humidity forecast before each shift.
 - Knowing and being able to recognize the signs and symptoms of heat illness.
 - Knowing the first aid procedures needed to treat the various forms and stages of heat illness.
 - Posting HIPP Emergency Response Procedures.
 - Contacting emergency services and accurately reporting the work location to 911 when needed.
- Employees In addition to the responsibilities listed in the IIPP, employees are responsible for:
 - Familiarizing themselves with and following the Heat Illness Prevention Program.
 - Knowing and being able to recognize the signs and symptoms of heat illness.
 - Knowing the first aid procedures needed to treat the various forms and stages of heat illness.
 - Frequently consuming the provided drinking water throughout the work day.
 - Taking a five minute break in an adequately shaded area when a preventative recovery period is needed.

- Contacting emergency services and accurately reporting the work location to 911 when needed.

C. ACTION DETAILS

Each of OlympiaTech ' employee exposed to the environmental risk factors of heat illness will be included in this program. This means that they will be provided with an adequate water supply, shade for recovery periods, and heat illness prevention/treatment training. To ensure all employees comply with rules and maintain a safe workplace, the compliance system includes:

- Identifying weather conditions in which the program will take effect:
- Check heat index before beginning work. If a heat advisory is released or the heat index is in the extreme caution (yellow), danger (light red) or extreme danger (dark red) the HIPP should be implemented.
- Providing water and shade for employees:
 - Ensure all employees working outdoors have access to potable drinking water. OlympiaTech will set aside funds for the purchase of water in locations where it is not plumbed or otherwise continuously supplied.
 - Each applicable location will be provided with one quart of water per person per hour.
 - Each applicable location will determine how water will be distributed to employees, (e.g. water coolers or water bottles).
 - Water should be kept out of direct sunlight to remain as cool as possible.
- Shade:
 - Shade is defined as the blockage of direct sunlight; some sources of shade may include trees, canopies or buildings.
 - All employees will be provided with a shaded area, or other cooling methods that are at least as effective, for their rest/recovery breaks.
 - Shade is not adequate when heat in the area of shade does not allow the body to cool. Examples of inadequate places to seek shade are cars, parking booths (unless air conditioned), and heat generating machinery.
 - Employees shall be allowed and encouraged to take a rest in the shade for a period of no less than five minutes at a time when they feel the need to do so to protect themselves from overheating. Such access to shade shall be permitted at all times.

D. TRAINING

Training provided by OlympiaTech will cover the following topics:

- Environmental and personal risk factors.
- The procedures for complying with the requirements of Title 8 California Code of Regulations Section 3395.
- The importance of water consumption.
- Acclimatization.

- The different types, signs and symptoms of heat illness.
- Reporting symptoms or signs of heat illness in themselves or in co-workers.
- Procedures for responding to symptoms of possible heat illness.
- Procedures for contacting emergency medical services.
- Procedures for ensuring that, in the event of an emergency, clear and precise directions to the work site can and will be provided to emergency responders.

Environmental and personal risk factors

- Environmental risk factors for heat illness are “working conditions that create the possibility that heat illness could occur.” These risk factors include, but are not limited to, the following:
 - Air temperature
 - Humidity
 - Air movement
 - Work severity and duration
 - Personal Protective Equipment (PPE)
- Personal risk factors for heat illness include but are not limited to the following:
 - Age
 - Health
 - Water consumption
 - Consumption of diuretics
 - Degree of acclimatization
 - Use of prescription and non-prescription medications

Procedures for complying

- Provide all employees and supervisors with required training.
- Provide fresh water and shade for each employee.
- Develop and implement written procedures for complying with the heat illness prevention standard.
- All employees will be trained prior to working outdoors.
- When possible, working hours will be modified to work during the cooler hours of the day.
- When a modified or shorter work-shift is not possible, more water and rest breaks will be provided.
- Supervisors will stay alert to the presence of heat related symptoms.

Consumption of water

It is important that employees do not rely on thirst to prompt them to drink water. Once a person begins to feel thirst, the body has already lost a significant amount of water. During heavy physical activity an employee may need to drink 8-12 oz. of water every 20 minutes in order to prevent dehydration and heat illness.

Employees are to avoid drinks with excessive amounts of sugar and carbohydrates, as these ingredients may cause the employee to feel full or even sick. Employees should come to work well hydrated and should take 5 minute recovery periods to allow the body to cool off throughout the workday. If possible, keep water out of direct sunlight and encourage employees to frequently drink small quantities of water when the work environment is hot and employees are likely to sweat more than usual.

Acclimatization

When supervisors and employees are exposed to the environmental and personal risk factors for heat illness, they should take the proper precautions. Use of acclimatization, the gradual adaptation of the body to work in the heat, can help minimize an employee's chances of falling ill. Most people become acclimated to significant changes in temperature by progressively increasing their workload over a period of four to ten days. The human body needs time to adjust to working in hot and humid conditions. Acclimatization is important for employees that are: returning to work after a prolonged absence, returning to work after being off sick, moving from a cooler climate to a hotter climate, or are in an area experiencing a heat wave bringing higher temperatures or humidity levels.

The different types, signs and symptoms of heat illness

There are five different types of heat illness that employees and supervisors need to be aware of and be able to recognize while working. It is important that all employees working in the sun remain aware of how their bodies are handling working under the various environmental and personal risk factors. They should also be aware of how their co-workers are handling working under extreme conditions.

- Sunburn
- Heat Rash
- Heat Cramps
- Heat Exhaustion
- Heatstroke (or sunstroke)

Reporting the symptoms or signs of heat illness

If employees are experiencing any of the heat illness signs or symptoms they should:

- Immediately report these signs or symptoms to their immediate supervisors.
- If the victim's symptoms indicate sunburn, heat rash, heat cramps or heat exhaustion the supervisor should follow first aid procedures.
- If the victim's symptoms indicate heatstroke the supervisor should immediately seek medical attention.
- Procedures for responding to heat illness symptoms

- When a victim experiences symptoms of heat illness the supervisor must be immediately notified.
- Commence first aid treatment and contact emergency services if needed.
- Sunburn
 - Symptoms of sunburn usually include redness and pain. In severe cases there may be swelling of skin, blisters, fever and headaches.
 - Use ointment for mild cases of blisters.
 - If the blisters break one should apply dry sterile dressing.
 - A physician should be seen for extensive cases.
- Heat Rash

This form of heat illness is one of the most common problems in hot work environments. Symptoms generally include red clusters of pimples or small blisters on the neck and upper chest.

 - Keep the affected area dry.
 - Avoid using ointments or creams- they may make the condition worse.
- Heat Cramps
 - The victim will feel muscle pains or spasms, usually in the abdomen, arms or legs.
 - Stop all activity and sit in an air-conditioned or shaded area.
 - Drink cool water, clear juices or sports drinks.
 - Seek medical attention if cramps continue
- Heat Exhaustion
 - Symptoms of heat exhaustion may include heavy sweating and weakness, a fast and weak pulse rate, nausea, fainting or vomiting.
 - Stop all activity and get into an air-conditioned or shaded area.
 - Lie down and loosen clothing.
 - Drink cool, not iced, water or sports drinks.
 - Cool the person by spraying or sponging him or her with cool water and fanning.
 - Monitor the person carefully. Heat exhaustion can quickly become heatstroke. If fever greater than 102 degrees F, fainting, confusion or seizures occur, call for emergency medical assistance.
- Heatstroke or Sunstroke
 - Symptoms of heat stroke may include high body temperature of 106 degrees F or higher, hot dry skin, unconsciousness or convulsions.
 - Stop all activity and get victim into an air-conditioned or shaded area.
 - Call for emergency medical assistance.

- Do not give anything by mouth (even water).
- Cool the person by spraying or sponging him or her with cool and fanning.
- Once the employee has been treated, the supervisor should conduct an emergency refresher on Heat Illness Prevention for all employees on site.
- The supervisor should have employees fill out a sign in sheet.
- The supervisor must attach a summary of what was said along with any handouts that were passed out.

Contacting emergency services

All supervisors are responsible for filling in all the site-specific information on the Emergency Response Procedures form. Under item one of the Emergency Response Procedures form, supervisors are responsible for filling in the phone number employees must use to contact emergency services. Each job site determines this number.

- Clear and precise directions
- Supervisors are responsible for filling in the full address and a contact number for the work site. Employees will be using this information during an emergency so it is important to be as specific as possible. The supervisor must write down any instructions emergency services may need in order to reach the victim or the worksite. It is important that the supervisor gives special instructions that are specific to the work location. If there is a section in item two that does not apply to your workplace please write N/A in the blank spaces provided.

HEXAVALENT CHROMIUM PROGRAM

A. PURPOSE AND SCOPE

The program provides information and the process to follow to recognize, evaluate, and control employee exposure to Cr VI at OlympiaTech project locations. Where states OSHA agencies may have more stringent requirements, contact the appropriate Health and Safety Lead to address these specific requirements. This program applies when employees may be exposed to Cr VI due to the following activities:

- OlympiaTech employees who may be exposed to Cr VI when performing hot work such as welding on stainless steel or Cr VI painted surfaces, traffic painting or paint removal containing Cr VI, refractory brick restoration, or soil disturbance activities such as drilling or from heavy equipment moving on soils containing Cr VI soils.
- OlympiaTech workers who may be exposed to Cr VI when working at project sites or in proximity to Cr VI related operations such as electroplating, painting (aerospace and auto body repair), chromate pigment and chemical production, chromium dye and catalyst production, glass manufacturing, or plastic colorant production. (OlympiaTech subcontractor, or third-party contractor employees)
- OlympiaTech provides oversight of subcontractor's activities where worker exposures to Cr VI can occur.

B. RESPONSIBILITIES

- Health and Safety (H&S) Leads are responsible for assisting Project Managers in implementing this program for all projects where there is a potential for worker exposure to Cr VI. The H&S Lead has the authority to approve deviations from this standard to accommodate additional domestic and international requirements.
- Project Manager is responsible for implementing this procedure and providing adequate resources (budget and staff) for project-specific implementation of the H&S management process on projects where there is a potential for worker exposure to Cr VI. The PM has overall H&S management responsibility, but may delegate specific tasks to other project staff. The PM retains ultimate H&S responsibility
- The Manager is responsible for all field operations onsite and is typically the Construction Manager, Site Superintendent, Site Supervisor, or Field Team Leader. The Site Manager is directly responsible for implementing all aspects of the project H&S plan and applicable requirements of this program.
- The Health & Safety Manager is to provide health and safety technical guidance and support to the project. The HSM prepares and /or approves the OlympiaTech project H&S plan, develops the Cr VI sampling plan, conducts the personal protective equipment (PPE) evaluation for skin, eye, and respiratory hazards to Cr VI, reviews subcontractor H&S plans and submittals, conducts project H&S audits, and provides H&S support and guidance to the project.
- The Site Safety Coordinator is either the Site Manager or is someone designated by the Site Manager to implement the project H&S plan. The Site Safety Coordinator ensures that the appropriate elements of this program are implemented.

C. DEFINITIONS

- Action Level
 - The action level for implementation of this program is a concentration of airborne Cr VI of 2.5 micrograms per cubic meter (2.5µg/m³) of air calculated as an 8-hour time-weighted average (TWA).
- Chromium VI or Hexavalent Chrome
 - Chromium with a valence of positive six, in any form and in any compound.
- Emergency Release
 - Any activity that results or is likely to result in an uncontrolled release of Cr VI. If an incidental release of Cr VI (measured at or below the Permissible Exposure Limit) can be controlled at the time of release by workers in the immediate release area, it is not an emergency.
- Worker Exposure
 - The exposure to airborne Cr VI that would occur if the worker was not using respiratory protection.
- High-Efficiency Particulate (HEPA) Filter
 - Filter that is at least 99.97 percent (%) efficient in removing mono-dispersed particles of 0.3 micrometers (µg) in diameter or larger.
- Historical Monitoring Data
 - Hexavalent chromium exposure assessment monitoring conducted prior to May 30, 2006, obtained during work operations conducted under workplace conditions closely resembling the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.
- Objective Data
 - Information such as air monitoring data from industry-wide surveys or calculations based on the composition or chemical and physical properties of a substance demonstrating the worker exposure to Cr VI associated with a particular product or material or a specific process, operation, or activity. The data must reflect workplace conditions closely resembling the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.
- Permissible Exposure Limit (PEL)
 - The level of worker exposure to an airborne concentration of Cr VI, without regard to the use of respirators, at 5 micrograms per cubic meter of air (5 µg/m³) calculated as an 8-hour time-weighted average (TWA) that cannot be exceeded.

D. REQUIREMENTS

The following requirements outline the mandatory criteria that each OlympiaTech . Employee must comply with when implementing this program using their policies, procedures, processes, training, and contracting documents.

- Subcontractor Management
 - Subcontractor H&S responsibilities are expressly defined through the subcontract terms and conditions. Subcontractors must determine how to conduct their operations in compliance with applicable H&S regulations and industry standards, and how to correct deficiencies. OlympiaTech employees shall not direct the means and methods of subcontractor operations.
 - Subcontractors are responsible and accountable for implementing these requirements and any additional requirements established in their own health and safety procedures as described in OlympiaTech Health & Safety Program, Contracts, Subcontracts, and HSE&Q Practices.
 - Subcontractors retain control over their practices, and OlympiaTech oversight does not relieve them of their own responsibility for effective implementation and enforcement of H&S requirements.
 - The “Subcontractor Health and Safety Procedure Criteria – Cr VI” provides the minimum criteria for these safety procedures. These criteria may be used by the H&S staff to review submitted subcontractor safety procedures when OlympiaTech is performing oversight of subcontractor’s operations.
- Exposure Determination
 - Initial exposure monitoring must be conducted to document worker breathing-zone exposures over the course of a full shift. A representative 8-hour TWA sample shall be collected to determine employee exposure for each job classification in each work area.
 - Air monitoring will be performed at the beginning of each job task.
 - Exposure determinations must follow the current, accepted sampling and analytical method equivalent to that used by OSHA.
 - Sample media used for Cr VI monitoring will be analyzed using an industrial hygiene laboratory accredited by the American Industrial Hygiene Association equivalent laboratory accreditation can be substituted in countries that do not have an AIHA-accredited industrial hygiene laboratory.
 - Periodic monitoring of workers is required at least every 6 months when the initial monitoring indicates TWA results are equal to or greater than the Action Level (AL) but below the Permissible Exposure Limit (PEL).
 - When initial monitoring results are greater than the PEL, additional periodic monitoring, at least quarterly, for each worker involved is required.
 - Periodic monitoring every 6 months or quarterly may be halted when two consecutive samples taken at least 7 days apart are equal to or below the AL.
 - When monitoring results fall below the AL, monitoring may be suspended.
 - Additional monitoring is required when there has been a change in production process, control equipment, personnel, or work practices that may result in new or additional exposures.

- A performance-oriented option may be used to determine the initial 8-hour TWA exposure for each worker on the basis of any combination of air monitoring data, historical monitoring data, or objective data sufficient to accurately characterize exposure to Cr VI.
- Workers shall be informed in writing of exposure monitoring results within 5 working days after receipt of the results.
- When the PEL has been exceeded, notification to the affected worker shall include the control measures utilized to reduce the exposure to below the PEL.
- Demarcation of Regulated Areas Work areas where worker exposure to Cr VI is or can reasonably be expected to exceed the OSHA PEL must be demarcated and access limited to only workers authorized to
- **Methods of Compliance**
 - Engineering and work practice controls must be applied to reduce the Cr VI worker exposure level to below the OSHA PEL unless it can be demonstrated that such controls are not feasible. Rotating employees to different jobs shall not be used to achieve compliance with the PEL. Methods of compliance in the hierarchy of controls include the following:
- **Substitution – gas tungsten arc welding (GTAW) instead of shielded metal arc welding (SMAW) or flux cored arc welding (FCAW)**
 - Engineering controls – mechanical ventilation to remove fumes from the breathing zone
 - Administrative controls – safe work practices for the worker on proper positioning to minimize fume trail in their breathing zone, either through positioning upwind in an open area or in proper alignment with ventilation controls
 - Personal protective equipment (PPE) – use of respiratory protection as the last resort in reducing exposure or as an interim measure until substitution can be applied or engineering controls installed.
- **Respiratory Protection**
 - Respiratory protection will be provided by the employer and worn by the worker sufficient to reduce the exposure to below the Cr VI action level. Respiratory protection will be used only as a last resort to ensure that worker exposure to Cr VI is maintained below the action level, or as an interim measure while applying substitution of materials or processes, implementation of work practice controls, or installation of mechanical ventilation. When employee exposures are above the PEL for no more than 30 days per year (12 consecutive months) from a particular process or task, respiratory protection can be primarily relied upon to ensure employee exposure is maintained below the PEL. The elements of the respiratory protection program must comply with the OlympiaTech Respiratory Protection, and 29 CFR 1910.134, Respiratory Protection. Key elements for an appropriate respiratory protection program include the following:
 - Exposure assessment to determine the appropriate respiratory protection to be selected with the required protection factor and fit factor.

- Medical surveillance for workers to determine their ability to wear respiratory protection
- Fit testing of workers to identify which model and type of respiratory protection can be worn
- Training workers on how to wear, use, clean and maintain their respiratory protection equipment
- Respirator cartridge change-out guidelines for workers
- Periodic evaluation of the respiratory protection program by the assigned H&S representation
- Personal Protective Equipment (PPE) and Work Clothing
 - Personal protective equipment and work clothing shall be provided to workers where an eye or skin hazard may exist to Cr VI at no cost to them. The elements of the PPE and work clothing program must comply with the OlympiaTech Personal Protective Equipment, and 29 CFR 1910.132, General Requirements for Personal Protective Equipment, and 29 CFR 1910.133, Eye and Face Protection. Key elements for an appropriate protective work clothing program include the following:
 - Evaluation by the HSM of work tasks to identify the appropriate type of PPE and work clothing
 - Providing the appropriate PPE and work clothing in a variety of sizes and styles
 - Training workers on wearing, using, cleaning, and maintaining PPE and work clothing
 - Ensuring that workers do not remove contaminated PPE or work clothing from the worksite
 - Providing a service to launder reusable work clothing
 - Repair or replace as needed
- Hygiene Areas and Practices
 - Where work clothing is required to be worn in place of street clothing to prevent skin exposure to Cr VI, change rooms and washing facilities must be provided. Change rooms must include separate storage facilities for work clothing and for street clothes. Washing facilities must be readily accessible to workers and must be used by them at the end of the work shift and prior to eating, drinking, smoking, chewing tobacco or gum, applying cosmetics, or using the toilet. An area on the worksite must be designated to be free of Cr VI for workers to consume food or beverages.
- General Work Practices and Housekeeping
 - Work areas or project sites where Cr VI can potentially expose workers must implement and follow work practices to maintain acceptable housekeeping conditions to minimize contact or exposure. General work practices and housekeeping must include the following:
 - All surfaces must be maintained as clean as practicable to minimize accumulation of Cr VI containing substances, dust or particles

- All spills and releases of Cr VI containing material must be cleaned up promptly
- Surfaces contaminated with Cr VI must be cleaned with HEPA-filter vacuuming or equivalent methods or practices that minimize the potential for worker exposure
- Avoid using compressed-air, dry-shoveling, dry sweeping, or dry brushing, and use only when a HEPA-filter vacuum system or equivalent method has been tried and found to be not effective
- Collection of waste, scrap, debris, or other materials contaminated or containing Cr VI must be in impermeable containers or bags and labeled meeting hazard communication requirements described in OlympiaTech Hazard Communication, or 29 CFR 1910.1200, Hazard Communication.
- Waste containing significant amounts of chromium may be subject to hazardous waste regulations and the corresponding generation, treatment and disposal requirements.
- Medical Surveillance
 - Workers who are or will be potentially exposed to airborne Cr VI above the action level for at least 30 days per year, without regard to respirator use, will participate in their employer's Cr VI medical surveillance program. Further participation in periodic Cr VI medical surveillance will be based on exposure conditions (such as an emergency or when a worker shows signs or symptoms of exposure), annually, or within a specified frequency determined by OlympiaTech consulting physician (or equivalent), and at termination of employment. Subcontractors are responsible for their workers receiving medical surveillance for Cr VI as required by regulatory requirements, contract, or their own company's requirements.
- Communication of Hazards
 - Information concerning Cr VI hazards will be communicated according to the requirements of the OSHA Hazard Communication Standard and the OSHA Cr VI Standard including, but not limited to, the requirements concerning warning signs and labels, material safety data sheets (MSDSs), and employee information and training. The entrance to regulated areas must be posted with signs that read "CHROMIUM VI REGULATED AREA – AUTHORIZED PERSONNEL ONLY". In addition to the posting requirements, owners, contractors, and other personnel working in the area must be notified. All storage or shipping containers shall be labeled with the following "Danger – Contains Cr VI – Cancer Hazard – Harmful if inhaled or swallowed – Use Only with Adequate Ventilation or Respiratory Protection". A copy of this program and the OSHA Cr VI Standards (General Industry and Construction) will be made available to all affected project workers. Additional communication requirements are described in the training section.

E. TRAINING REQUIREMENTS

Workers who may be exposed to airborne Cr VI above the action level or anticipate working on projects where they could be exposed to airborne Cr VI above the action level, or to soil that contains elevated levels of Cr VI, must complete initial Cr VI exposure training. This training covers the following information:

- Where Cr VI is typically encountered at OlympiaTech projects
- The regulatory requirements, exposure limits, potential hazards including toxicity and physical characteristics, and medical monitoring requirements
- For site-specific Cr VI hazards, discussion on the location and tasks associated with potential exposure and associated control measures
- Information contained in the site-specific Health, Safety, and Environmental Protection Plan or Job Hazard Analysis created for the project
- Quantity, location, manner of use, storage, sources of exposure, and the specific nature of operations that could result in exposure to Cr VI, as well as any necessary protective steps
- Purpose, proper use, and limitations of respirators
- Purpose and a description of the medical surveillance program
- Engineering controls and work practices associated with the employee's job assignment
- A review of this program. Each worker must be provided with a copy of the OSHA Chromium Standard (General Industry and/or Construction) and appendices if requested. Subcontractors are responsible for complying with all applicable training requirements relating to Cr VI exposure and for providing the training necessary to complete their tasks. OlympiaTech will provide initial training prior to or at each initial assignment. OlympiaTech will ensure the training is understandable and ensure each employee can demonstrate knowledge of the health hazards associated with Cr VI exposure, location, manner of use, and release of chromium in the workplace; engineering controls and work practice controls; purpose, proper selection, fitting, proper use and limitations of respirators and protective clothing; emergency procedures; measures employees can take to protect themselves from exposure; purpose and description of medical surveillance program; contents of the standard. OlympiaTech will have readily available without cost to all affected employees. OlympiaTech will document all training.

F. RECORDKEEPING

An accurate record of all worker personal air sampling and other air monitoring related to determining Cr VI exposure for OlympiaTech employees must be completed and maintained that includes the following:

- Industrial hygiene sampling surveys
- Specific information on the sample date, worker(s) sampled, job classification, process or task sampled, materials used, PPE worn, sample duration, air sampling, and analytical method for historical monitoring data, an accurate record of the determination must include the following information:
- Confirmation that the data was collected using acceptable sampling and analytical methods
- Description of the process that matches the task, conditions, materials, equipment, and processes for which the exposure is being determined for objective data, an accurate

record of information that is relied upon to determine worker exposure must include the following information:

- The type of chromium-containing material
- Description of the process, activity or operation
- Other relevant information used to support a comparable exposure assessment
- Exposure assessment records related to Cr VI, including worker personal air sampling, historical monitoring data, and objective data must be maintained for a minimum of thirty (30) years. Copies of exposure assessment records for OlympiaTech, employees are to be forwarded to OlympiaTech HR Manager. Medical monitoring records related to Cr VI must be maintained for each employee for thirty (30) years beyond their duration of employment. Medical monitoring records will be retained in the employee's medical file and maintained by OlympiaTech, occupational health care provider.

G. Cr VI FACT SHEET

- Uses and Occurrences
 - Chromium is a naturally occurring element in rocks, animals, plants, soil and volcanic gases. Chromium occurs in the environment predominantly in one of two valence states:
 - Trivalent (Cr III), which occurs naturally and is an essential nutrient, and
 - Hexavalent chromium (Cr VI), which, along with the less common metallic chromium (Cr 0), is most commonly produced in plating processes. The major industrial sources of Cr VI compounds are chromate pigments in dyes, paints, inks, and plastics; chromates added as anti-corrosive agents to paints, primer, and other surface coatings; chrome plating by depositing chromium metal onto an item's surface using a solution of chromic acid; particles released during smelting of ferro-chromium ore; fumes from welding stainless steel or nonferrous chromium alloys; and as an impurity in Portland cement
 - Physical Characteristics/Appearance: Dark red flakes or powder Odor: None Flammable: Non-combustible, solid, but will accelerate the burning of Flash Point: None Flammable Range: None Specific Gravity: 2.7 for Cr Visibility: Stable Incompatibilities: Reducing and oxidizing agents, acetic acid Melting point: 1907°C or 3465°F for Cr Boiling point: 2671°C or 4840°F for Cr combustible materials
- Signs and Symptoms of Exposure
 - Short term (Acute): Coughing, sneezing, chest pain, breathing difficulty, itching
 - Long term (Chronic): Allergic (asthma like symptoms) respiratory reaction, skin and burning sensation to skin, lungs and eye irritation, nosebleeds, contact dermatitis, allergic like skin reaction, ulceration and perforation of the nasal septum
- Modes of Exposure
 - Inhalation: Dusts and fume
 - Skin Absorption: Liquid

- Ingestion: Dusts and liquids
- Exposure Limits
 - Action level: 2.5 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) PEL: 5 $\mu\text{g}/\text{m}^3$ STEL: None TLV: 5 $\mu\text{g}/\text{m}^3$
- PPE
 - Eye: Safety glasses
 - Skin: Chemical protective gloves and body protection
 - Respiratory: Air-purifying respirators and supplied-air respirators, depending on the exposure, and a PAPR if requested by the worker.
- First Aid
 - Inhalation: Move to fresh air; seek medical attention promptly
 - Skin: Quick drenching with water; wash skin with soap and water;
 - Eyes: Flush with water for 15 minutes, lifting the lower and upper
 - Ingestion: Seek medical attention promptly seek medical attention promptly lids occasionally; seek medical attention promptly.

HOUSEKEEPING PROGRAM

A. PURPOSE AND SCOPE

The goal of OlympiaTech housekeeping program is to create and maintain all company site offices and storage trailers, storage areas, fabrication shops and lay down yards and construction work areas in a clean and orderly condition. This will help create a hazard-free work environment. This written program works to create and maintain a safe work environment as required in 29CFR 1926.25.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Develop a plan to maintain good housekeeping at the beginning of the job.
- Ensure this plan is carefully supervised and followed through to the final clean-up.

Supervisor

The Supervisor will:

- Make certain that trash and scrap metal containers are provided and that these containers are emptied as often as needed to maintain an orderly work environment.
- Ensure that garbage and other wastes will be disposed of at frequent and regular intervals.

Employees

Employees will:

- Share the responsibility of maintaining a clean jobsite.
- Pick up their own scrap materials, tools, electrical cords, etc. and place them in the proper places as work progresses.

C. ACTION DETAILS

The housekeeping plan will be developed at the beginning of a job and carefully supervised and followed through until the final jobsite clean-up. Individual containers will be provided for the different types of debris and trash that is generated at the jobsite.

Debris and trash will be removed from the jobsite as often as is necessary to maintain orderliness.

A rush schedule cannot be used by this company or any subcontractor and will not be allowed as an excuse to allow poor housekeeping habits.

Housekeeping is a shared responsibility that can't be ignored. All employees at a jobsite will pick up after themselves and any trash or debris they generate.

Dirty light fixtures reduce essential light levels. Clean light fixtures can improve lighting efficiency significantly and will be kept in this condition.

Aisles will be wide enough to accommodate people and vehicles comfortably and safely. Aisle space allows for the movement of people, products and materials.

Aisles and stairways will be kept clear. They will not be used for temporary “overflow” or “bottleneck” storage. Adequate lighting will be maintained in stairways and aisles.

Tools require suitable fixtures with marked locations to provide orderly arrangement, both in the tool room and near the work bench. They will be returned promptly after each use to reduce the chance of them being misplaced or lost.

Employees will regularly inspect, clean and repair all tools and take any damaged or worn tools out of service.

A regular collection, grading and sorting of scrap will be conducted. Contract Documents will determine who has ownership of any material that is demoed or removed. No Employee is allowed to remove or take possession of any material removed during demolition or renovation without expressed written consent of the owner and/or the contractor.

Scrap containers will be kept near where the waste is produced to encourage orderly waste disposal and make collection easier.

HYDROGEN SULFIDE PROGRAM

A. PURPOSE

OlympiaTech has developed and has developed this program to assure that all company employees performing job tasks where a potential Hydrogen Sulfide exposure could occur, are protected. Compliance with this program is mandatory and is applicable to all company employees who work in an environment where Hydrogen Sulfide may be present in any amount. Failure to comply will result in disciplinary action and/or is grounds for termination.

B. DEFINITIONS

Hydrogen Sulfide

- Most exposures center on the oil and natural gas industries.
- Hydrogen sulfide is an extremely toxic, flammable gas that may be encountered in the production of gas well gas, high-sulfide, high sulfur content crude oil, crude oil fractioning, associated gases, and waters.
- Hydrogen sulfide is heavier than air and can collect in low places.
- As an employee of OlympiaTech, potential exposure to various forms and amounts of hydrogen sulfide may occur during certain job activities. However, any exposure should be avoided.
- If an exposure cannot be avoided through ventilation, etc., proper personal protective equipment must be used.

C. FORMS OF HYDROGEN SULFIDE EXPOSURE

- Hydrogen Sulfide exposures are almost exclusively through inhalation.
- However, other exposures such as ingestion should not be overlooked.
- Inhalation at certain concentrations of Hydrogen Sulfide can lead to injury or death.
- The listed IDLH (immediately dangerous to life & health) level is extremely low (300 PPM).

D. HEALTH EFFECTS OF HYDROGEN SULFIDE OVEREXPOSURE

- If steps are not taken to control exposure, continued inhalation of Hydrogen Sulfide could result in:
 - Loss of the sense of smell.
 - Death
- Low concentration exposures (under 10 PPM)
- In low concentrations, Hydrogen Sulfide can be detectable by its odor; however, the smell cannot be relied upon to forewarn of dangerous concentrations, because it rapidly paralyzes the sense of smell. A longer exposure to the lower concentrations may result in the loss of the sense of smell.
- Symptoms from repeated exposure to low concentrations usually disappear after being removed from the exposure for a period of time.

- Higher concentration exposures (10 PPM and above)
- Concentrations that are prolonged or of high concentrations may lead to death.
- It should be well understood that the sense of smell will be rendered ineffective by hydrogen sulfide, which can result in an individual failing to recognize the presence of dangerously high concentrations. Exposure to hydrogen sulfide causes death by poisoning the respiratory system.

E. REPORTING OF PROBLEMS

- Immediately notify your supervisor if you develop potential signs or symptoms associated with Hydrogen Sulfide exposure. You should also notify your supervisor if you have difficulty breathing while wearing a respirator or suspect problems with other personal protective equipment.

F. EXPOSURE ASSESSMENT

- The job site foreman will determine if employees are exposed to concentrations of hydrogen sulfide. The exposure determination shall be based on the following:
 - Personal exposure monitoring
 - If the initial exposure determination reveals employee exposure to be below the STEL, continuous monitoring will be performed. In addition, continuous ventilation shall be used. Appropriate personal protective equipment will be worn by all employees exposed to Hydrogen Sulfide.

G. PREVENTING EXPOSURE

- Proper control of exposure to Hydrogen Sulfide is the responsibility of both the host employer, OlympiaTech and the employee. All of the control methods discussed below are essential to minimize additional sources of Hydrogen Sulfide absorption from inhalation. Strict compliance with these provisions can virtually eliminate several sources of Hydrogen Sulfide exposure that significantly contribute to excessive Hydrogen Sulfide absorption.
- Review the site specific safety programs as well as the site emergency action plan.
- Ventilation systems may provide for venting of the Hydrogen Sulfide vapor prior to entrance into the area.
- Confined Space Entry Procedures will greatly reduce the hazards to employees and should be followed whenever entry into a confined space is required.
- Respiratory Protection shall be used in combination with continuous monitoring when warranted by the conditions of the area.
- Exposure to hazardous materials requires special precautions against absorption of toxic compounds.
- While engineering controls (e.g. ventilation systems) are the primary means of controlling materials such as Hydrogen Sulfide vapors, it is often necessary to rely on respiratory protection. The respirator will give you the proper amount of protection based on the nature of the hazard.

LADDER SAFETY PROGRAM

A. PURPOSE AND SCOPE

The goal of the Ladders and Stairways program is to establish safety rules regarding use, inspection and maintenance of ladders and stairways. This written program works to create and maintain a safe work environment for OlympiaTech employees as required in 29 CFR Subpart X.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Ensure training is provided to OlympiaTech employees on ladder selection, inspection and maintenance as well as the recognition of hazards associated with ladder use.
- Ensure training is provided to OlympiaTech employees on stairway construction, use and maintenance as well as the recognition of hazards associated with stairway use.
- Ensure all ladders used by OlympiaTech employees are safe and in good operating condition.

Supervisor

The Supervisor will:

- Ensure ladders are used safely and as they are designed to be used.
- Ensure that job-made ladders are constructed and used safely.
- Visually inspect ladders periodically

Employees

Employees will:

- Inspect ladders prior to using them. If the ladder is defective, it will be tagged and removed from service.
- Receive training on the selection, inspection and maintenance of ladders and the hazards associated with their use.
- Receive training on stairway construction, use and maintenance and the hazards associated with their use.
- Use ladders safely and as they are designed to be used.

C. ACTION DETAILS

- Ladders that are found to be in any way defective or damaged are immediately tagged and taken out of service. Ladders must be destroyed if they cannot be repaired to manufacturer's specifications. No ladders may be taken home by any employee, defective or otherwise for personal use.

- A stairway or ladder must be provided if there is a break in elevation of 19" or more. Side rails on extension ladders must extend no less than 36 inches above the landing. If this is not practical, grab rails must be installed.
- Extension ladders will be placed at a 4:1 ratio.
- Ladders must not be placed in passageways, doorways, driveways or any location where they may be displaced by activities being conducted on any other work, unless protected by barricades or guards.
- Metal ladders must not be used for electrical work or where they may contact electrical conductors.
- OlympiaTech employees must always face the ladder when going up or down and maintain three-point contact.
- Self-supporting ladders must generally be rated at least four times the maximum intended load.
- Stairways, such as those going into the job trailer, with four or more risers or rising more than 30 inches will be equipped with at least one handrail and one stair rail system along each unprotected side or edge.
- Treads for temporary service will be made of wood or other solid material and will be installed the full width and depth of the stair. Temporary use of Pan Stairs may only be done if the stairs are filled with wood or solid material at least to the top of the pan.
- Ladder rungs must be uniformly spaced and meet OSHA/ANSI specifications.

LEAD AWARENESS PROGRAM

A. PURPOSE AND SCOPE

The purpose of this procedure is to advise employees in areas where lead is suspected and inform OlympiaTech employees about the properties and dangers of lead by explaining general guidelines and training requirements.

This procedure applies to OlympiaTech operations where employees whose work activities may contact lead containing materials but do not disturb the material during their work activities. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers OlympiaTech employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

B. RESPONSIBILITIES

Managers and Supervisors

- In coordination with the Safety Manager, develop and implement annual lead awareness training. In coordination with the Safety Manager complete proper documentation of the Lead training as well as participants.
- Ensure personnel are aware of work that has the potential of exposure to lead.
- Identify possible locations where lead in the workplace may be found.
- Inform the Safety Manager of upcoming work involving known or suspected lead-containing materials, allowing the Safety Manager to provide any necessary monitoring or other required actions.
- Ensure employees comply with the lead awareness requirements.

Safety Manager:

- Coordinate annual lead awareness training activities.

Employees:

- Comply with the lead awareness requirements and direct any questions or concerns to the Safety Manager.
- Attend required annual training.
- Review material safety data sheets or consult with the supervisor to identify any container with lead-containing material

C. HEALTH EFFECTS OF LEAD

Common symptoms of acute lead poisoning are loss of appetite, nausea, vomiting, stomach cramps, constipation, difficulty sleeping, fatigue, moodiness, headache, joint or muscle aches, and anemia. Long term (chronic) overexposure to lead may result in severe damage to the blood-forming, nervous, urinary, and reproductive systems.

D. LOCATIONS

- Each worksite shall create a list of possible locations of lead containing materials such as leaded paints, leaded solders, pipes, batteries, circuit boards, cathode ray tubes, leaded glass, and demolition/salvage materials.
- The list is to be provided to the Safety Manager on a quarterly basis and revised as lead containing materials are added or eliminated from the previous list.

E. GENERAL REQUIREMENTS

OlympiaTech employees must abide by any signs/labels/assessment reports indicating the presence of lead containing materials and will not disturb the lead containing material. Appropriate work practices shall be followed to ensure the lead containing materials are not disturbed. Regulated access signs are to demarcate the lead exposure regulated work areas. The signs should read as follows:

- WARNING
- LEAD WORK AREA
- POISON
- NO SMOKING OR EATING

F. GENERAL WORK PRACTICES

When working on multi-contractor worksites OlympiaTech employees shall be protected from exposure. If employees working immediately adjacent to a lead abatement activity are exposed to lead due to the inadequate containment of such job, OlympiaTech shall either remove the employees from the area until the enclosure breach is repaired or perform an initial exposure assessment.

OlympiaTech employees will wash hands and face if lead materials are contacted. Employees' hands and faces shall be washed if lead containing materials are contacted. Any possible contact with lead containing material must be reported immediately to the supervisor or Safety Manager.

- If air is recirculated back into the workplace, the system must be equipped with a HEPA (high efficiency particulate air) and backup filter, and a system to monitor the lead level will be installed.
- When using mechanical means to remove lead-containing paints or coatings, use equipment which is equipped with a HEPA collection system.
- Whenever possible, use a wet system to reduce airborne dust.
- Whenever possible, substitute lead material with non-leaded material.
- Respirators shall be used during the time period required to install or implement control if engineering and work practices are insufficient as well as for emergency use.
- If respirators are required, they will be NIOSH certified and all employees will follow the Respiratory Protection Program.

LOTO HAZARDOUS ENERGY PROGRAM

A. PURPOSE AND SCOPE

The objective of this procedure is to establish a means of positive control to prevent the accidental starting or activating of machinery or systems while they are being repaired, cleaned and/or serviced. This program serves to:

- Establish a safe and positive means of shutting down machinery, equipment and systems.
- Prohibit unauthorized personnel or remote control systems from starting machinery or equipment while it is being serviced.
- Provide a secondary control system (tagout) when it is impossible to positively lockout the machinery or equipment.
- The tagout system will provide full employee protection.
- Establish responsibility for implementing and controlling lockout/tagout procedures.
- Ensure that only approved locks, standardized tags and fastening devices provided by OlympiaTech will be utilized in the lockout/tagout procedures.

B. RESPONSIBILITIES

- OlympiaTech will provide the protective materials and hardware such as locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware for isolating, securing or blocking of machines or equipment from energy sources.
- Responsible Person will be responsible for the verification and implementing the lockout/tagout program.
- Responsible Persons are responsible for enforcing the program and insuring compliance with the procedures in their departments to all of their effected employees.
- Responsible Person is responsible for monitoring the compliance of this procedure and will conduct the annual inspection and certification of the authorized OlympiaTech employees.
- Authorized OlympiaTech employees are responsible for following established lockout/tagout procedures. An authorized employee is defined as a person who locks out, tags out or isolates the machines or equipment in order to perform servicing or maintenance on that machine or equipment. The lockout and tagout devices shall include the name of the individual that is placing the device and the date that it is being placed. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered in 1910.147, The Control of Hazardous Energy (lockout/tagout).
- Affected OlympiaTech employees (all other OlympiaTech employees in the facility) are responsible for insuring they do not attempt to restart or re-energize machines or equipment that are locked out or tagged out. An affected employee is defined as a person whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job

requires him/her to work in an isolated area in which such servicing or maintenance is being performed.

- Where an energy isolation device is not capable of being locked out the Responsible Persons will utilize the tag out system that will provide full employee protection.
- Responsible Persons are responsible for enforcing the tagout program and insuring compliance with the tag out procedures in their departments to all of their effected employees.
- Responsible persons will insure that whenever replacement, major repair, renovation or modification of a machine or equipment is completed, that equipment shall be designed to accept a lockout device.
- Responsible persons shall insure full employee protection when a tag out device is used on an emergency isolation device which is not capable of being locked out. The tag out device shall be attached at the same location that the lock out device would be.
- OlympiaTech Co will demonstrate that the tag out program will provide a level of safety equivalent to that obtained by using the lock out system.

C. PROCEDURES

- The ensuing items are to be followed to ensure both compliance with the OSHA Control of Hazardous Energy Standard and the safety of OlympiaTech employees.
- Preparation for Lockout or Tagout: OlympiaTech employees who are required to utilize the lockout/tagout procedure must be knowledgeable of the different energy sources and the proper sequence of shutting off or disconnecting energy means. The four types of energy sources are:
 - Electrical (most common form);
 - Hydraulic or pneumatic;
 - Fluids and gases; and
 - Mechanical (including gravity).
- More than one energy source may be utilized on some equipment and the proper procedure must be followed in order to identify energy sources and lockout/tagout accordingly.
- Shift or Personnel Changes - If a lockout procedure will extend into the following shift, the authorized employee who originally placed the lock will remove it and it will immediately be replaced with the lock of the authorized employee who is to continue the repair or maintenance on that equipment or machine for the following shift.
- When testing or positioning machines, equipment or components in situations in which lockout or tagout devices must be temporarily removed, the following sequence of actions shall be followed:
 - Clear the machine or equipment of tools and materials,
 - Remove employees from the machine or equipment area, Remove the lockout or tagout devices,

- Energize and proceed with testing or positioning,
- De-energize all systems and reapply energy control measures.

Preparation for Lockout or Tagout

- Employees who are required to utilize the lockout/tagout procedure must be knowledgeable of the different energy sources and the proper sequence of shutting off or disconnecting energy means. The four types of energy sources are:
- In preparation for shut down, all affected employees shall be notified that a lockout system is to be utilized and the reason for it, before the controls are applied.
- If the machine or equipment is operating, shut it down by the normal stopping procedure (Depress stop button, open toggle switch, etc.)

Electrical

- Shut off power at machine and disconnect.
- Disconnecting means must be locked or tagged.
- Press start button to see that correct systems are locked out.
- All controls must be returned to their safest position.

Points to remember:

- If a machine or piece of equipment contains capacitors, they must be drained of stored energy due to the possibility of re-accumulation.
- Possible disconnecting means include the power cord, power panels (look for primary and secondary voltage), breakers, the operator's station, motor circuit, relays, limit switches, and electrical interlocks.
- Some equipment may have a motor isolating shut-off and a control isolating shut-off.
- If the electrical energy is disconnected by simply unplugging the power cord, the cord must be kept under the control of the authorized employee or the plug end of the cord must be locked out or tagged out.

Hydraulic/Pneumatic

- Shut off all energy sources (pumps and compressors). If the pumps and compressors supply energy to more than one piece of equipment, lockout or tagout the valve supplying energy to the piece of equipment being serviced.
- Stored pressure from hydraulic/pneumatic lines shall be drained or bled when release of stored energy could cause injury to OlympiaTech employees.
- Make sure controls are returned to their safest position (off, stop, standby, inch, jog, etc.).

Fluids and Gases

- Identify the type of fluid or gas and the necessary personal protective equipment.
- Close valves to prevent flow, and lockout/tagout.
- Determine the isolating device, then close and lockout/tagout.

- Drain and bleed lines to zero energy state.
- Some systems may have electrically controlled valves. If so, they must be shut off and locked/tagged out.
- Check for zero energy state at the equipment.

Mechanical Energy

Mechanical energy includes gravity activation, energy stored in springs, etc.

- Block out or use die ram safety chain.
- Lockout or tagout safety device.
- Shut off, lockout or tagout electrical system.
- Check for zero energy state.
- Return controls to safest position.
- Release from Lockout/Tagout

Inspection

- Make certain the work is completed and inventory the tools and equipment that were used.
- Clean-up: Remove all towels, rags, work-aids, etc.
- Replace guards: Replace all guards possible. Sometimes a particular guard may have to be left off until the start sequence is over due to possible adjustments. However, all other guards should be put back into place.
- Check controls: All controls should be in their safest position.
- The work area shall be checked to ensure that all OlympiaTech employees have been safely positioned or removed and notified that the lockout/tagout devices are being removed.
- Remove locks/tags. Remove only your lock or tag.
- Service or Maintenance Involving More than One Person
- When servicing and/or maintenance is performed by more than one person, each authorized employee shall place his own lock or tag on the energy isolating source. This shall be done by utilizing a multiple lock scissors clamp if the equipment is capable of being locked out. If the equipment cannot be locked out, then each authorized employee must place his tag on the equipment.
- Removal of an Authorized Employee's Lockout/Tagout by OlympiaTech
- Each location must develop written emergency procedures that comply with 1910.147(e) (3) to be utilized at that location.
- Emergency procedures for removing lockout/tagout should include the following:
 - Verification by the employer that the authorized employee who applied the device is not in the facility.

- Make reasonable efforts to advise the employee that his/her device has been removed. (This can be done when he/she returns to the facility).
- Ensure that the authorized employee has this knowledge before he/she resumes work at the facility.
- Shift or Personnel Changes
- Each facility must develop written procedures based on specific needs and capabilities. Each procedure must specify how the continuity of lockout or tagout protection will be ensured at all times.

Procedures for Outside Personnel/Contractors

- Outside personnel/contractors shall be advised that OlympiaTech has and enforces the use of lockout/tagout procedures. They will be informed of the use of locks and tags and notified about the prohibition of attempts to restart or re-energize machines or equipment that are locked out or tagged out.
- OlympiaTech will obtain information from the outside personnel/contractor about their lockout/tagout procedures and advise affected OlympiaTech employees of this information.
- The outside personnel/contractor will be required to sign a certification. If outside personnel/contractor has previously signed a certification that is on file, additional signed certification is not necessary.

Training and Communication

- Each authorized employee who will be utilizing the lockout/tagout procedure will be trained in the recognition of applicable hazardous energy sources, the type and magnitude of energy available in the workplace, and the methods and means necessary for energy isolation and control.
- Each affected employee (all OlympiaTech employees other than authorized OlympiaTech employees utilizing the lockout/tagout procedure shall be instructed in the purpose and use of the lockout/tagout procedure, and the prohibition of attempts to restart or re-energize machines or equipment that are locked out or tagged out.
- Training will be certified. The certifications will be retained in the employee personnel files.
- Retraining is required when there is a change in job assignments, in machines, a change in the energy control procedures, or a new hazard is introduced
- All training and retraining will be documented, signed and certified.

Periodic Inspection

- A periodic inspection (at least annually) will be conducted of each authorized employee under the lockout/tagout procedure. This inspection shall be performed by the (Responsible person) If (Responsible person) is also using the energy control procedure being inspected, then the inspection shall be performed by another party.
- The inspection will include a review between the inspector and each authorized employee of that employee's responsibilities under the energy control (lockout/tagout)

procedure. The inspection will also consist of a physical inspection of the authorized employee while performing work under the procedures.

- The (Responsible person) shall certify in writing that the inspection has been performed. The written certification shall be retained in the individual's personnel file.

LOCKOUT TAGOUT PROGRAM

A. PURPOSE AND SCOPE

This procedure shall be used to prevent employee exposure to hazardous electrical energy. It establishes the minimum requirements for lockout (tagout) of electrical energy sources. It provides procedures for ensuring conductors and circuit parts are disconnected from electrical energy sources and that stored energy sources are controlled. Control includes release of the stored energy as well as the prevention of re-accumulation of energy.

An individual employee control procedure will be used and no lockout tagout will be required under the following circumstances:

- Equipment with exposed conductors and circuit parts are de-energized for minor maintenance, servicing, adjusting, cleaning, inspection, or similar operation
- Disconnecting means are adjacent to the conductor, circuit parts, and equipment on which the work is performed,
- The disconnecting means is clearly visible to all OlympiaTech employees involved in the work,
- The work does not extend beyond the work shift.

However, all steps in Section C shall be completed to ensure individual employee control is appropriate and all energy sources are identified and controlled.

B. TRAINING AND RESPONSIBILITIES

All OlympiaTech employees shall receive training as prescribed in Section B (2) of this program. All new or transferred OlympiaTech employees and all other persons whose work operations are or might be in the area shall be instructed in the purpose and use of this procedure. A list of these OlympiaTech employees (or job titles of OlympiaTech employees with responsibility) is attached here. Where needed a separate list will be included in the procedures for a given operation where LOTO is used. All persons installing a LOTO device shall sign their names and the date on the tag. For a complex LOTO the name of the individual or person in charge will be identified in the plan along with procedures for maintaining contact with that individual.

Training

All OlympiaTech employees engaged in LOTO shall receive the following training:

- The importance of LOTO and its impact on safety
- The purpose and procedures set forth in this program as well as any individual LOTO plans developed for a specific operation
- Recognizing LOTO devices
- Installing LOTO devices
- Duty of employer in writing procedures
- Duty of employee in executing procedures
- Duty of person-in-charge

- Authorized and unauthorized removal of locks/tags
- Enforcing execution of LOTO procedures
- Individual employee control of energy
- Simple LOTO
- Complex LOTO
- Using single line and diagrammatic drawings to identify sources of energy
- Use of tags and warning signs
- Release of stored energy
- Personnel accounting methods
- Grounding needs/requirements
- Safe use of voltage detecting instruments
- Additional training as needed to address specific hazards associated with a given operation

C. PREPARATION FOR LOCKOUT (TAGOUT)

- All disconnecting means shall be identified and located to ensure that energy is interrupted by a physical break and not de-energized by a circuit interlock. This shall be accomplished by reviewing current diagrammatic drawings or other means, tags, labels, and signs.
- A list of disconnecting means to be locked (tagged) will be developed and attached to the plan for each LOTO operation.
- Each disconnecting means shall be evaluated to determine the adequacy of their interrupting ability. Based on the evaluation, it will be determined if verification of a visible open point is possible, or if other precautions are needed.
- Work activity where any personnel might be exposed to sources of electrical energy hazards will be identified. It will be determined if there are any other energy sources in the area where OlympiaTech employees may be exposed to other types of energy.
- Energy control methods will be established for all hazardous energy sources. A voltage detector rated for voltage to which OlympiaTech employees may be exposed will be selected for the operation.
- A procedure will be established for each operation to determine that the voltage detector is operating properly.
- The possibility of induced voltages or stored electrical energy will be identified. Grounds will be applied as needed before touching conductors or circuit parts.

D. LOCKOUT (TAGOUT) STEPS

- The following identifies the basic steps for LOTO. In addition to these steps, it shall be determined whether a Simple or Complex LOTO can be performed. The Complex LOTO

plan shall address any additional steps required. A Complex LOTO will be performed when any of the following exist:

- Multiple energy sources (more than one)
- Multiple crews
- Multiple crafts
- Multiple locations
- Multiple employers
- Unique disconnecting means
- Complex or particular switching sequences
- Continues for more than one shift, that is, new workers
- Notify OlympiaTech employees a lockout (tagout) is going to be implemented and the reason. A qualified employee knowledgeable of hazards associated with electrical energy shall implement the lockout (tagout). He/She shall know the location of disconnecting means for all sources of electrical energy and stored energy.
- The qualified person shall de-energize and disconnect the electric supply and relieve all stored energy.
- All disconnecting means will be locked/ tagged out with lockout (tagout) devices. Refer to Section H for appropriate devices. Where only a tag is used, one of the following additional safety measures will be used to prevent re-energization:
 - Opening the circuit at:
 - Blocking the circuit at:
 - Removal of the following circuit element:
- To determine that operation is prohibited, the person applying the LOTO shall attempt to operate the disconnecting means.
- A voltage-detecting instrument shall be used. Refer to Section H for appropriate devices. Inspect the device and do not proceed if it is damaged. Secure an undamaged device and proceed.
- Verify proper operation of the device and test for absence of voltage.
- Repeat verification of device after testing for absence of voltage.
- Where needed, install grounds on the phase conductors or circuit parts, to eliminate induced voltage or stored energy. Where it has been determined that contact with other exposed energized conductors or circuit parts is possible, apply ground connecting devices rated for the available fault duty.
- LOTO Complete

E. REMOVAL OF LOTO

- Visually verifies work is complete.
- Clean up and remove all tools, equipment, and un- used materials.

- Remove all grounds.
- Notify all personnel involved that the lockout (tagout) is complete, electrical energy will be restored, and to remain clear of equipment and electrical energy.
- Perform quality control checks.
- Remove lockout (tagout) devices (This must be done by the person(s) who installed them.
- Notify the owner that the equipment and/or electrical supply is ready to be returned to normal operation.
- Return the disconnecting means to their normal condition.

F. SPECIAL PROCEDURES

- Each person shall install his/her own personal lockout (tagout) device for all simple LOTO operations where more than one person is involved.
- When the lockout (tagout) extends for more than one day, the lockout (tagout) shall be verified to be still in place at the beginning of the next day. Where the lockout (tagout) is continued on successive shifts, the lockout (tagout) is considered to be a complex lockout (tagout).

G. DISCIPLINE

Any violation of the procedures in this program including operating a disconnecting means that has been locked out or tagged out will result in disciplinary action deemed by safety director and upper management.

H. EQUIPMENT

- Lockout devices must indicate the identity and department of the employee who attaches the device.
- Lockout Tags will be used as a communication tool. Tags cannot stand alone as a lockout device, except when applying a lock at the isolation point has no value in securing a lockout condition.
- Examples: locks on blocks, wedges, pipe blanks or skillets cannot help secure these isolation points. Tags should be attached to those locations to identify the "lockout" condition, the date and person working on that equipment.
- Locks will be locked and keyed different
- Tags will be designed to alert the equipment is locked out with the name of the individual THAT locked it out and the date it was locked out.

I. AUDIT

- An audit of this program and procedures shall be conducted annually.

NFPA 70E Program

A. PURPOSE AND SCOPE

The purpose of this program is to set forth procedures for OlympiaTech as to the safe use of electrical equipment, tools, and to comply with NFPA 70E requirements. This program applies to all OlympiaTech employees, temporary employees, and contractors. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers OlympiaTech employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

- OlympiaTech shall advise the host employer of:
 - Any unique hazards presented by the contract employer's work,
 - Any unanticipated hazards found during work by OlympiaTech that the host employer did not mention, and
 - The measures OlympiaTech took to correct any hazards reported by the host employer to prevent such hazards from recurring in the future.

B. RESPONSIBILITIES

- Managers/Supervisor
 - The HSE Manager will develop electrical safety programs and procedures in accordance with OSHA requirements and/or as indicated by events and circumstances.
- Operations Managers and Supervisors
 - Responsible for ensuring that only qualified employees and or qualified contractors perform electrical repairs or installations. Unqualified persons shall not be permitted to enter spaces that are required to be accessible to qualified employees only, unless the electric conductors and equipment involved are in an electrically safe work condition.
- Operations Managers and Supervisors
 - Shall ensure a documented job briefing is held before starting each job and will include all employees involved. The briefing will cover hazards associated with the job, work procedures involved, special precautions, energy source controls and PPE requirements.
 - Ensure an audit of field work is completed on an annual basis
- Operations Managers
 - Responsible for ensuring all applicable electrical safety programs are implemented and maintained at their locations.
- Employees
 - Responsible to use electrical equipment, tools, and appliances according to this program, for attending required training sessions when directed to do so and to report unsafe conditions to their supervisor immediately.

- Only qualified employees may work on electric circuit parts or equipment that has not been de-energized. Such employees shall be made familiar with the use of special precautionary techniques, PPE, insulating and shielding materials and insulated tools. only qualified employees may complete tasks such as testing, troubleshooting and voltage measuring on electrical equipment
- Arc flash risk assessment shall be completed
- Safe Work Practices Prior to any work being done within the Limited Approach Boundary a hazard risk analysis shall be performed. The analysis shall contain event severity, frequency, probability and avoidance to determine the level of safe practices employed. Alerting Techniques shall be defined to warn employees of potential hazards. Safe Work Practices for working within the Limited Approach Boundary. The limited approach boundary is the distance from an exposed live part within which a shock hazard exists. The restricted approach boundary is the closest distance to exposed live parts a qualified person can approach with without proper PPE and tools. Inside this boundary, accidental movement can put a part of the body or conductive tools in contact with live parts or inside the prohibited approach boundary.
- To cross the restricted approach boundary, the qualified person must:
 - Have an energized work permit that is approved by the supervisor or manager responsible for the safety plan.
 - Use PPE suitable for working near exposed lived parts and rated for the voltage and energy level involved.
 - Be certain that no part of the body enters the prohibited space.
 - Minimize the risk from unintended movement, by keeping as much of the body as possible out of the restricted space; body parts in the restricted space should be protected. The prohibited approach boundary is the minimum approach distance to exposed live parts to prevent flashover or arcing. Approaching any closer is comparable to making direct contact with a live part. To cross the prohibited approach boundary, the qualified person must:
 - Have specified training requirements for qualified persons who are allowed to work within the Limited Approach Boundry and to work on exposed live parts.
 - Have a permit with proper written work procedures and justifying the need to work that close.
 - Do a risk analysis.
 - Have (2) and (3) approved by the appropriate supervisor.
 - Use PPE appropriate for working near exposed live parts and rated for the voltage and energy level involved. The Flash Protection Boundary is the approach limit at a distance from exposed live parts within which a person could receive a second degree burn if an electrical arc flash were to occur.
 - Use PPE appropriate for working near exposed live parts and rated for the voltage and energy level involved.
 - For systems of 600 volts and less, the flash protection boundary is 4 feet, based on an available bolted fault current of 50 kA and a clearing time of 6 cycles for

the circuit breaker to act, or any combination of fault currents and clearing times not exceeding 300 kA cycles.

- When working on de-energized parts and inside the flash protection boundary for nearby live exposed parts - If the parts cannot be de-energized, use barriers such as insulated blankets to protect against accidental contact or wear proper PPE.
- Arc Flash Hazard Analysis
- An arc flash hazard analysis includes the following:
 - Collect data on the facility's power distribution system.
 - Arrangement of components on a one-line drawing with nameplate specifications of every device.
 - Lengths and cross-section area of all cables.
 - Contact the electric utility for information including the minimum and maximum fault currents that can be expected at the entrance to the facility.
 - Conduct a short circuit analysis followed by a coordination study is performed.
 - Feed the resultant data into the NFPA 70E equations.
 - These equations produce the necessary flash protection boundary distances and incident energy to determine the minimum PPE requirement.
 - The flash protection boundary is the distance at which PPE is needed to prevent incurable burns (2nd degree or worse) if an arc flash occurs. (It is still possible to suffer 1st or 2nd degree burns.)
 - For systems of 600 volts and less, the flash protection boundary is 4 feet, based on an available bolted fault current of 50 kA (kiloamps) and a clearing time of 6 cycles (0.1 seconds) for the circuit breaker to act, or any combination of fault currents and clearing times not exceeding 300 kA cycles (5000 ampere seconds). When working on de-energized the parts, but still inside the flash protection boundary for nearby live exposed parts:
 - If the parts cannot be de-energized, barriers such as insulated blankets must be used to protect against accidental contact or PPE must be worn.
 - Employees shall not reach blindly into areas that might contain exposed live parts.
 - Employees shall not enter spaces containing live parts unless illumination is provided that allows the work to be performed safely.
 - Conductive articles of jewelry and clothing (such as watchbands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, metal headgear, or metal frame glasses) shall not be worn where they present an electrical contact hazard with exposed live parts.
 - Conductive materials, tools, and equipment that are in contact with any part of an employee's body shall be handled in a manner that prevents accidental contact with live parts. Such materials and equipment include, but are not limited

to long conductive objects such as ducts, pipes, tubes, conductive hose and rope, metal-lined rules and scales, steel tapes, pulling lines, metal scaffold parts, structural members, and chains.

- When an employee works in a confined space or enclosed spaces (such as a manhole or vault) that contains exposed live parts, the employee shall use protective shields, barriers or insulating materials as necessary to avoid contact with these parts. Doors, hinged panels, and the like shall be secured to prevent them from swinging into employees. Refer to the confined space entry program.

Inspections

- Electrical equipment, tools, and appliances must be inspected prior to each use.
- The use of a hard fixed GFCI or a portable GFCI adapter shall be used with all portable hand tools, electric extension cords, drop lights and all 110 volt equipment.
- Faulty equipment, tools, or appliances shall be removed from service immediately and tagged "Out of Service", dated and signed by the employee applying the tag.

Equipment

- Test instruments, equipment, and their accessories shall meet the requirements of ANSI/ISA-61010-1-Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use Part 1 General Requirements, for rating and design requirements for voltage measurement and test instruments intended for use on electrical systems 1000 Volts and below. When test instruments are used for the testing for the absence of voltage on conductors or circuit parts operating at 50 volts or more, the operation of the test instrument shall be verified before and after an absence of voltage test is performed.

- Personal Protective Equipment

All insulating PPE must be inspected before each day's use and immediately following any incident that can reasonably be suspected of having caused damage. PPE must comply with all applicable laws and regulations Insulating gloves shall be given an air test, along with the inspection.

Maximum test intervals for rubber insulating personal protective equipment shall include:

- Blankets-before first issue/every 12 months thereafter
 - Gloves-before first issue and every 6 months
 - Sleeveless before first issue and every 12 months
 - Covers and line hose shall be testing if insulating value is suspect.
- Energized Electrical Work Permit
- Work on energized electrical conductors or circuit parts that are not placed in an electrically safe work condition shall be considered energized electrical work and shall be performed by written permit only.

Lighting

- Employees shall not enter spaces containing electrical hazards unless illumination is provided that enables the employees to perform the work safely. Where lack of illumination or an obstruction precludes observation of the work to be performed employees shall not perform any task within the Limited Approach Boundary of energized electrical conductors or circuit parts operating at 50 volts or more or where an electrical hazard exists.
- Extension Cords
 - Use only three-wire, grounded, extension cords and cables that conform to a hard service rating of 14 amperes or higher, and grounding of the tools or equipment being supplied.
 - Only commercial or industrial rated-grounded extension cords may be used in shops and outdoors.
 - Cords for use other than indoor appliances must have a rating of at least 14 amps.
 - Cords must have suitable strain relief provisions at both the plug the receptacle ends.
 - Work lamps (drop light) used to power electrical tools must have a 3 wire, grounded outlet, unless powering insulated tools.
 - Adapters that allow three wire, grounded prongs, connected to two wire non-grounded outlets are strictly prohibited.
 - Cords must have a service rating for hard or extra-hard service and have S, AJ, ST, SO, SJO, SJT, STO, or SJTO printed on the cord.
 - Cords may not be run through doorways, under mats or carpets, across walkways or aisles, concealed behind walls, ceilings or floors, or run through holes in walls, or anywhere where they can become a tripping hazard.
 - High current equipment or appliances should be plugged directly into a wall outlet whenever possible. ○ All extension cords shall be plugged into one of the following:
 - A GFCI outlet;
 - A GFCI built into the cord;
 - A GFCI adapter used between the wall outlet and cord plug
 - All extension cords and or electrical cords shall be inspected daily or before each use, for breaks, plug condition and ground lugs, possible internal breaks, and any other damage. If damage is found, the extension cord or electrical cord shall be remove from service and repaired or replaced.
 - Extension cords shall not be used on compressor skid to operated heat tapes or any other type of equipment on a temporary basis. Heat tapes or other equipment shall be hard wired per applicable electrical codes.

- Outlets
 - Outlets connected to circuits with different voltages must use a design such that the attachment plugs on the circuits are not interchangeable.
- Multiple Outlet Boxes
 - Multiple outlet boxes must be plugged into a wall receptacle. • Multiple outlet boxes must not be used to provide power to microwave ovens, toasters, space heaters, hot plates, coffeepots, or other high-current loads.
- Double Insulated Tools
 - Double insulated tools must have the factory label intact indicating the tool has been approved to be used without a three wire grounded supply cord connection.
 - Double insulated tools must not be altered in any way, which would negate the factory rating.
- Switches, circuit breakers, and disconnects
 - All electrical equipment and tools must have an on and off switch and may not be turned on or off by plugging or unplugging the supply cord at the power outlet.
 - Circuit breaker panel boxes and disconnects must be labeled with the voltage rating.
 - Each breaker within a breaker panel must be labeled for the service it provides.
 - Disconnect switches providing power for individual equipment must be labeled accordingly
- Ladders
 - Only approved, non-conductive ladders, may be used when working near or with electrical equipment, which includes changing light bulbs.
 - Ladders must be either constructed of wood, fiberglass, or have non-conductive side rails.
 - Wood ladders should not be painted, which can hide defects, except with clear lacquer.
 - When using ladders they shall be free from any moisture, oils, and greases.
- Energized and Overhead High Voltage Power Lines & Equipment
 - A minimum clearance of 10 feet from high voltage lines must be maintained when operating vehicular and mechanical equipment such as forklifts, cranes, winch trucks, and other similar equipment.
 - When possible, power lines shall be de-energized and grounded or other protective measures shall be provided before work is started.
 - Minimum approach distance to energized high power voltages lines for unqualified employees is 10 feet.
 - Minimum approach distance for qualified employees shall be followed per 29 CFR 1910.333(c)(3)(i) Qualified – Table S5 Selection and Use of Work Practices - Approach Distances for Qualified Employees – Alternating Current).

- Confined or Enclosed Work Spaces
 - When an employee works in a confined or enclosed space that contains exposed energized parts, the employee shall isolate the energy source and turn off the source and lock and tag out the energy source (Only qualified electricians can work on an exposed energy source).
 - Protective shields, protective barriers or insulating materials as necessary shall be provided.
- Enclosures, Breaker Panels, and Distribution Rooms
 - A clear working space must be maintained in the front, back and on each side of all electrical enclosures and around electrical equipment for a safe operation and to permit access for maintenance and alteration.
 - A minimum two-foot working floor space in front of panels and enclosures shall be painted yellow.
 - Employees may not enter spaces containing exposed energized parts unless illumination is provided that enables the employees to work safely.
 - Housekeeping in distribution rooms must receive high priority to provide a safe working and walking area in front of panels and to keep combustible materials to the minimum required to perform maintenance operations.
 - All enclosures and distribution rooms must have “Danger: High Voltage – Authorized Personnel Only” posted on the front panel and on entrance doors.
 - Flammable materials are strictly prohibited inside distribution rooms (Boxes, rags, cleaning fluids, etc.)
- Lock Out/Tag Out
 - No work shall be performed on (or near enough to them for employees to be exposed due to the dangers of tools or other equipment coming into contact with the live parts) live parts and the hazards they present.
 - If any employee is exposed to contact with parts of fixed electric equipment or circuits which have been de-energized, the circuits energizing the parts shall be locked out or tagged or both.
 - Conductors and parts of electrical equipment that have been de-energized but not been locked or tagged out shall be treated as live parts
 - Per OlympiaTech policy all electrical will be outsourced and performed only by qualified and licensed electrical contractors who are familiar with the use of special precautionary techniques, PPE, insulating and shielding materials and insulated tools. Any equipment being made ready for maintenance will be locked out using OlympiaTech Control of Hazardous Energy – Lock Out/Tag Out Program. Lockouts are performed by the HSE Manager, Shop Foreman or Branch Manager. Designated employees in some branches may be trained by local management to lock out equipment. If live sources are to be worked it will only be performed with the knowledge of local management. Only certified electricians may work on electric circuit parts or equipment.

- Only authorized personnel may perform lock out/tag out work on electrical equipment and will follow OlympiaTech Control of Hazardous Energy – Lock out/Tagout Program.
 - Authorized personnel will be trained in lock out/tag out procedures.
 - Affected personnel will be notified when lock out/tag out activities are being performed in their work area.
- Contractors
 - Only approved, certified, electrical contractors may perform construction and service work on OlympiaTech or client property.
 - It is the Manager/Supervisors responsibility to verify the contractor's certification.
- Fire Extinguishers
 - Approved fire extinguishers must be provided near electrical breaker panels and distribution centers.
 - Water type extinguishers shall not be located closer than 50 feet from electrical equipment.
- Electric Shock-CPR:
 - If someone is discovered that has received an electric shock and is unconscious, first check to see if their body is in contact with an electrical circuit. Do not touch a person until you are sure there is no contact with an electrical circuit.
 - When it is safe to make contact with the victim, begin CPR if the person's heart has stopped or they are not breathing.
 - Call for help immediately.
- Electric Welders
 - A disconnecting means shall be provided in the supply circuit for each motor-generator arc welder, and for each AC transformer and DC rectifier arc welder which is not equipped with a disconnect mounted as an integral part of the welder.
 - A switch or circuit breaker shall be provided by which each resistance welder and its control equipment can be isolated from the supply circuit. The ampere rating of this disconnecting means may not be less than the supply conductor ampacity.
- Equipment Grounding
 - All gas compressors, air compressors, separators, vessels, etc. shall be grounded by means of using a lug and ground strap, nominal in size to a ½" bolt or larger, attached to a ground rod six feet or longer.
 - Equipment bonding jumpers shall be of copper or other corrosion-resistance material.

- The transfer of hazardous or flammable material from a metal or plastic container with a flash point of 100 degrees F or less shall have a ground strap from the container and attached to the skid or a ground rod placed in the ground.
- Training
 - Employees are trained to understand the specific hazards associated with electrical energy. Employees shall be trained in safety-related work practices and procedural requirements as necessary to provide protection from the electrical hazards associated with their respective jobs.
 - Employees shall be trained to identify and understand the relationship between electrical hazards and possible injury. Employees shall be trained in the skills and techniques to distinguish exposed energized electrical conductors and circuit parts from other parts of electrical equipment, to determine the nominal voltage of exposed energized electrical conductors and circuit parts, the approach distances specified in Table 130.2 (below), and the decision making process necessary to determine the degree and extent of the hazard and the personal protective equipment and job planning necessary to perform the task safely.
 - Employees shall be trained in safety related work practices that pertain to their respective job assignments.
 - Safe work practices shall be employed to prevent electric shock or other injuries resulting for either direct or indirect electrical contacts when work is performed near or on equipment or circuits which are or may be energized.
 - Training shall be documented and maintained for the duration of the employee's employment.
 - Documentation shall be made when the employee demonstrates proficiency, be maintained for the duration of the employee's employment, and contain each employee's name and date of training
 - Retraining will be conducted when the employee is not complying with safety related work practices or when workplace changes necessitate the use of safety-related work practices that are different from those that the employee would normally use.
 - Retraining shall be received every 3 years
 - All training and retraining of employees will be documented and kept on file.

NOISE EXPOSURE HEARING CONSERVATION PROGRAM

A. PURPOSE AND SCOPE

This program is developed to comply with 29 CF 1910.95 and 29 CFR 1926.52 Occupational Noise Exposure to ensure the protection of OlympiaTech employees from hearing loss. The extent to which the elements of this program will be implemented depends on the noise levels present. Whenever employee noise exposure equals or exceeds the 8 – hour time-weighted average (TWA) noise level of 85 decibels, A scale – slow response; i.e., the action level, this program will be implemented in its entirety. When noise does not exceed these levels, but hearing protectors are provided for comfort responsibilities and actions will be limited to training, selection and the safe use of the protectors.

B. RESPONSIBILITIES

- If necessary, personal monitoring will be conducted
- If necessary, audiometric testing will be provided
- Train OlympiaTech employees in the proper selection, use, care, cleaning, storage and limitations of the hearing protection.
- Make a copy of the standard and all records related to the standard available to all OlympiaTech employees upon request and as needed.

Supervisor

The Supervisor will:

- Ensure that OlympiaTech employees who are exposed to hearing hazards have and use the appropriate hearing protection.
- Ensure that a copy of the standard is posted as needed.

Employees

Employees will:

- Be trained to recognize workplace environmental noise hazards and the appropriate measures to protect themselves including, but not limited to, hearing protection.
- Use hearing protection when conditions warrant its use.

C. ACTION DETAILS

Safety Director

The Safety Director will:

- Conduct noise monitoring as needed, but may rely on noise exposure data from the host employer, and arrange for a proper hazard assessment to determine the proper type of hearing protection to be used.
- Train OlympiaTech employees to recognize potential workplace environmental noise hazards.
- A copy of the standard and all records related to the standard are available to the OlympiaTech employees upon request from: _____

- The standard will be posted.
- The exposure measurements and audiometric tests shall be kept on file.

Monitoring

- Personal monitoring will be conducted whenever there is insufficient information from a host employer and noise levels indicate there is a need (i.e. OlympiaTech employees have difficulty hearing each other due to noise levels for an extended period of time.)
- If monitoring is needed, the provider used for noise monitoring will be given special notice to the mobile nature of OlympiaTech employees and the variable noise levels experienced throughout an employee's work day.
- All OlympiaTech employees exposed to noise levels above 90 decibels (TWA) will be given a copy of the results.

Audiometric Testing Program

- If testing is needed, the provider of the audiometric testing program will be given a copy of the OSHA standard to ensure that the testing procedures meet OSHA requirements.
- The testing program will include baseline and annual audiograms.
- The annual audiogram will be reviewed against the baseline by a competent medical professional.
- An audiologist, otolaryngologist, or physician shall review problem audiograms to determine if there is a need for further evaluation.
- All noise monitoring, audiometric testing and employee notification will be performed as required by the standard.
- OlympiaTech will establish a baseline audiogram for each exposed employee within 6 months of first exposure after 14 hours without exposure.
- If a standard threshold shift has occurred the employee will be notified in writing within 21 days of determination
- Determined steps will be taken when a standard threshold shift occurs.
 - Hearing protection shall be re-evaluated and/or refitted and if necessary a medical evaluation may be required.

Hearing Protectors and Attenuation

- Appropriate hearing protectors will be supplied to all affected OlympiaTech employees.
- Attenuation requirements will be reevaluated when noise exposure changes.

D. TRAINING

- Each employee exposed to noise levels of concern will participate in training that includes:
 - The effects of elevated noise levels on OlympiaTech employees hearing,
 - The types of hearing protection that are appropriate to be used by OlympiaTech employees,

- How to properly insert and/or wear the various types of hearing protectors,
- The use, care, cleaning and disinfecting, and limitations of the various types of hearing protectors that are being used, and
- The purpose of audiometric testing.
- Employees will be provided with training on at least an annual basis, and shall be updated to be consistent with changes in the PPE and work processes.

E. RECORDKEEPING

- Where noise measurements or audiometric testing are performed, these measurements will be kept on file. Noise measurement records will be kept for two years. Audiometric tests shall be kept for the duration of the employee's employment.
- Records of the noise level test rooms shall be provided by the health center and kept on file with other noise exposure records.
- If necessary, these records will be transferred to new owners. All records are available upon request to OlympiaTech employees, former OlympiaTech employees, representatives designated by the individual employee, and the Assistant Secretary. See the provisions of 29 CFR 1910.1020 – Access to employee exposure and medical records or 1926.33 - Access to employee exposure and medical records.

PANDEMIC PREPAREDNESS PROGRAM

A. PURPOSE AND SCOPE

This plan was developed by OlympiaTech . The purpose of this plan is to outline the steps that OlympiaTech . and the employees can take to reduce the risk of exposure to viruses. The plan describes how to prevent worker exposure during a pandemic, protective measures to be taken on the jobsite, personal protective equipment and work practice controls to be used, cleaning and disinfecting procedures, and what to do if a worker becomes sick.

OlympiaTech take the health and safety of our employees very seriously. With the spread of a Pandemic Virus, we all must remain vigilant in mitigating the outbreak. This is particularly true for the construction industry, which may be deemed “essential” during a Declared National Emergency. In order to be safe and maintain operations, we have developed this Exposure Prevention, Preparedness, and Response Plan to be implemented throughout OlympiaTech and at all of our jobsites. We have also identified a team of employees to monitor available U.S. Center for Disease Control and Prevention (“CDC”) and Occupational Safety and Health Administration (“OSHA”) guidance on the virus.

This Plan is based on currently available information from the CDC and OSHA, and is subject to change based on further information provided by the CDC, OSHA, and other public officials. OlympiaTech may also amend this Plan based on operational needs. This plan is and will continue to be reviewed and tested. OlympiaTech will meet throughout and after this Pandemic to discuss lessons learned and add them to this plan.

B. RESPONSIBILITIES

We are asking every one of our employees to help with our prevention efforts while at work. In order to minimize the spread of viruses at our jobsites, we all must play our part. As set forth below, OlympiaTech has instituted various housekeeping, social distancing, and other best practices at our jobsites. All employees must follow these. In addition, employees are expected to report to their managers or supervisors if they are experiencing signs or symptoms of a virus, as described below. If you have a specific question about this plan, please ask your manager or supervisor.

OSHA and the CDC have provided the following control and preventative guidance to all workers, regardless of exposure risk:

- Employees will go through annual training on illness prevention, how to avoid spread of disease, and company policies concerning illness.
- Employees are encouraged to obtain appropriate immunizations.
- Frequently wash your hands with soap and water for at least 20 seconds. When soap and running water are unavailable, use an alcohol-based hand rub with at least 60% alcohol.
- Avoid touching your eyes, nose, or mouth with unwashed hands.
- Follow appropriate respiratory etiquette, which includes covering for coughs and sneezes.
- Avoid close contact with people who are sick.

In addition, employees must familiarize themselves with the symptoms of the virus:

- Coughing;
- Fever;
- Shortness of breath, difficulty breathing; and
- Early symptoms such as chills, body aches, sore throat, headache, diarrhea, nausea/vomiting, and runny nose.

If you develop a fever and symptoms of respiratory illness, such as cough or shortness of breath, DO NOT GO TO WORK and call your healthcare provider right away. Likewise, if you come into close contact with someone showing these symptoms, call your healthcare provider right away.

C. Job Site Protective Measures

OlympiaTech has instituted the following protective measures at all jobsites.

General Safety Policies and Rules

- Any employee/contractor/visitor showing symptoms will be asked to leave the jobsite and return home.
- Safety meetings will be by telephone, if possible. If safety meetings are conducted in-person, attendance will be collected verbally and the foreman/superintendent will sign-in each attendee. Attendance will not be tracked through passed-around sign-in sheets or mobile devices. During any in-person safety meetings, avoid gathering in groups of more than 10 people and participants must remain at least six (6) feet apart.
- Employees must avoid physical contact with others and direct employees/contractors/visitors to increase personal space to at least six (6) feet, where possible. Where work trailers are used, only necessary employees should enter the trailers and all employees should maintain social distancing while inside the trailers.
- All internal communication or in-person meetings will be limited. To the extent possible, meetings will be conducted by telephone.
- All External Communication typically will include email, mailed brochures, and other forms of multimedia to conduct profitable business.
- Employees will be encouraged to stagger breaks and lunches, if practicable, to reduce the size of any group at any one time to less than ten (10) people.
- OlympiaTech understands that due to the nature of our work, access to running water for hand washing may be impracticable. In these situations, OlympiaTech will provide alcohol-based hand sanitizers and/or wipes.
- Employees should limit the use of co-workers' tools and equipment. To the extent tools must be shared, OlympiaTech will provide alcohol-based wipes to clean tools before and after use. When cleaning tools and equipment, consult manufacturing recommendations for proper cleaning techniques and restrictions.

- Employees are encouraged to limit the need for N95 respirator use, by using engineering and work practice controls to minimize dust. Such controls include the use of water delivery and dust collection systems, as well as limiting exposure time.
- OlympiaTech will divide crews/staff into two (2) groups where possible so that projects can continue working effectively in the event that one of the divided teams is required to quarantine.
- As part of the division of crews/staff, OlympiaTech will designate employees into dedicated shifts, at which point, employees will remain with their dedicated shift for the remainder of the project. If there is a legitimate reason for an employee to change shifts, OlympiaTech will have sole discretion in making that alteration.
- Employees are encouraged to minimize ride-sharing. While in vehicle, employees must ensure adequate ventilation.
- If practicable, employees should use/drive the same truck or piece of equipment every shift.
- In lieu of using a common source of drinking water, such as a cooler, employees should use individual water bottles.

Workers Entering Occupied Building and Homes

- When employees perform construction and maintenance activities within occupied homes, office buildings, and other establishments, these work locations present unique hazards with regards to exposures. All such workers should evaluate the specific hazards when determining best practices related to the virus.
- During this work, employees must sanitize the work areas upon arrival, throughout the workday, and immediately before departure. OlympiaTech will provide alcohol-based wipes for this purpose.
- Employees should ask other occupants to keep a personal distance of six (6) feet at a minimum. Workers should wash or sanitize hands immediately before starting and after completing the work.

Job Site Visitors

- The number of visitors to the job site, including the trailer or office, will be limited to only those necessary for the work.
- All visitors will be screened in advance of arriving on the job site. If the visitor answers “yes” to any of the following questions, he/she should not be permitted to access the jobsite:
 - Have you been confirmed positive for the virus?
 - Are you currently experiencing, or recently experienced, any acute respiratory illness symptoms such as fever, cough, or shortness of breath?
 - Have you been in close contact with any persons who has been confirmed positive?

- Have you been in close contact with any persons who have traveled and are also exhibiting acute respiratory illness symptoms?
- Site deliveries will be permitted but should be properly coordinated in line with the employer's minimal contact and cleaning protocols. Delivery personnel should remain in their vehicles if at all possible.

Personal Protective Equipment and Work Practice Controls

- In addition to regular PPE for workers engaged in various tasks (fall protection, hard hats, hearing protection), employers will also provide:
 - Gloves: Gloves should be worn at all times while on-site. The type of glove worn should be appropriate to the task. If gloves are not typically required for the task, then any type of glove is acceptable, including latex gloves. Employees should avoid sharing gloves
 - Eye protection: Eye protection should be worn at all times while on-site.
- NOTE: The CDC is currently not recommending that healthy people wear N95 respirators to prevent the spread. Employees should wear N95 respirators if required by the work and if available.
- Due to the current shortage of N95 respirators, the following Work Practice Controls should be followed:
 - Keep dust down by using engineering and work practice controls, specifically through the use of water delivery and dust collection systems.
 - Limit exposure time to the extent practicable.
 - Isolate workers in dusty operations by using a containment structure or distance to limit dust exposure to those employees who are conducting the tasks, thereby protecting nonessential workers and bystanders.
- Institute a rigorous housekeeping program to reduce dust levels on the jobsite.

D. Job Site Cleaning and Disinfecting

OlympiaTech has instituted regular housekeeping practices, which includes cleaning and disinfecting frequently used tools and equipment, and other elements of the work environment, where possible. Employees should regularly do the same in their assigned work areas.

- Jobsite trailers and break/lunchroom areas will be cleaned at least once per day. Employees performing cleaning will be issued proper personal protective equipment ("PPE"), such as nitrile, latex, or vinyl gloves and gowns, as recommended by the CDC.
- Any trash collected from the jobsite must be changed frequently by someone wearing nitrile, latex, or vinyl gloves.
- Any portable jobsite toilets should be cleaned by the leasing company at least twice per week and disinfected on the inside. OlympiaTech will ensure that hand sanitizer dispensers are always filled. Frequently touched items (i.e. door pulls and toilet seats) will be disinfected frequently.

- Vehicles and equipment/tools should be cleaned at least once per day and before change in operator or rider.
- If an employee has tested positive for the virus of a pandemic, OSHA has indicated that there is typically no need to perform special cleaning or decontamination of work environments, unless those environments are visibly contaminated with blood or other bodily fluids. Notwithstanding this, OlympiaTech will clean those areas of the jobsite that a confirmed-positive individual may have come into contact with before employees can access that work space again.
- OlympiaTech will ensure that any disinfection shall be conducted using one of the following:
 - Common EPA-registered household disinfectant;
 - Alcohol solution with at least 60% alcohol; or
 - Diluted household bleach solutions (these can be used if appropriate for the surface).
- OlympiaTech will maintain Safety Data Sheets of all disinfectants used on site.

E. Job Site Exposure Situations

- Employee Exhibiting Pandemic Virus Symptoms
 - If an employee exhibits symptoms, the employee must remain at home until he or she is symptom free for 72 hours (3 full days) without the use of fever-reducing or other symptom-altering medicines (e.g., cough suppressants). OlympiaTech will similarly require an employee that reports to work with symptoms to return home until they are symptom free for 72 hour (3 full days). To the extent practical, employees are required to obtain a doctor's note clearing them to return to work.
- Employee Tests Positive Pandemic Virus
 - An employee that tests positive will be directed to self-quarantine away from work. Employees that test positive and are symptom free may return to work when at least seven (7) days have passed since the date of his or her first positive test, and have not had a subsequent illness. Employees that test positive and are directed to care for themselves at home may return to work when: (1) at least 72 hours (3 full days) have passed since recovery; and (2) at least seven (7) days have passed since symptoms first appeared. Employees that test positive and have been hospitalized may return to work when directed to do so by their medical care provider. OlympiaTech will require an employee to provide documentation clearing their return to work.
- Employee Has Close Contact with a Tested Positive Individual
 - Employees that have come into close contact with a confirmed-positive (co-worker or otherwise), will be directed to self-quarantine for 14 days from the last date of close contact with the carrier. Close contact is defined as six (6) feet for a prolonged period of time.

- If OlympiaTech learn that an employee has tested positive, OlympiaTech will conduct an investigation into co-workers that may have had close contact with the confirmed-positive employee in the prior 14 days and direct those individuals that have had close contact with the confirmed-positive employee to self-quarantine for 14 days from the last date of close contact with the carrier. If an employee learns that he or she has come into close contact with a confirmed-positive individual outside of the workplace, he/she must alert a manager or supervisor of the close contact and also self-quarantine for 14 days from the last date of close contact with the carrier.

F. OSHA Recordkeeping

If a confirmed case is reported, OlympiaTech will determine if it meets the criteria for recordability and reportability under OSHA's recordkeeping rule. OSHA requires construction employers to record work-related injuries and illnesses that meet certain severity criteria on the OSHA 300 Log, as well as complete the OSHA Form 301 (or equivalent) upon the occurrence of these injuries. OSHA also requires employers to report to OSHA any work-related illness that (1) results in a fatality, or (2) results in the in-patient hospitalization of one or more employee. "In-patient" hospitalization is defined as a formal admission to the in-patient service of a hospital or clinic for care or treatment.

OSHA has made a determination that Pandemic Viruses should not be excluded from coverage of the rule – like the common cold or the seasonal flu – and, thus, OSHA is considering it an "illness." However, OSHA has stated that only confirmed cases should be considered an illness under the rule. Thus, if an employee simply comes to work with symptoms consistent with the virus (but not a confirmed diagnosis), the recordability analysis would not necessarily be triggered at that time.

If an employee has a confirmed case OlympiaTech will conduct an assessment of any workplace exposures to determine if the case is work-related. Work-relatedness is presumed for illnesses that result from events or exposures in the work environment, unless it meets certain exceptions. One of those exceptions is that the illness involves signs or symptoms that surface at work but result solely from a non-work-related event or exposure that occurs outside of the work environment. Thus, if an employee develops the pandemic virus solely from an exposure outside of the work environment, it would not be work-related, and thus not recordable.

OlympiaTech's assessment will consider the work environment itself, the type of work performed, risk of person-to-person transmission given the work environment, and other factors such as community spread. Further, if an employee has a confirmed case that is considered work-related, OlympiaTech will report the case to OSHA if it results in a fatality within 30 days or an in-patient hospitalization within 24-hours of the exposure incident occurring.

G. “Essential” Industry

Several States and localities are issuing orders that prohibit work and travel, except for essential businesses. In general, construction work has been deemed essential and OlympiaTech is committed to continuing operations safely. If upon your travel to and from the worksite, you are stopped by State or local authorities, you will be provided a letter that you can show the authorities indicating that you are employed in an “essential” industry and are commuting to and from work.

In planning for a possible pandemic, we expect that up to 40 percent of the workforce will be absent at the peak of each wave. We anticipate that all sectors will be disrupted, especially responders and healthcare providers.

To ensure the continuation of routine community response during a pandemic OlympiaTech will:

- Prepare surge plans for sector-specific response.
- Coordinate with other sectors, as necessary.
- Be creative about alternative staffing and deployment strategies.

H. Confidentiality/Privacy

Except for circumstances in which OlympiaTech is legally required to report workplace occurrences of communicable disease, the confidentiality of all medical conditions will be maintained in accordance with applicable law and to the extent practical under the circumstances. When it is required, the number of persons who will be informed of an employee’s condition will be kept at the minimum needed not only to comply with legally-required reporting, but also to assure proper care of the employee and to detect situations where the potential for transmission may increase. A sample notice to employees is attached to this Plan. OlympiaTech reserves the right to inform other employees that a co-worker (without disclosing the person’s name) has been diagnosed if the other employees might have been exposed to the disease so the employees may take measures to protect their own health.

PERSONAL PROTECTIVE EQUIPMENT PROGRAM

A. PURPOSE AND SCOPE

The goal of the Personal Protective Equipment (PPE) program is to protect all OlympiaTech employees exposed to various workplace hazards. This can be accomplished through pre-planning and careful implementation of all applicable federal, state and local safety and health regulations/ standards. This written program works to create and maintain a safe work environment as required by 29 CFR 1910 Subpart E and 29 CFR 1926 Subpart E.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE). If such hazards are present, or likely to be present.
- Select, and have each affected employee use, the types of PPE that will protect the affected employee from the hazards identified in the hazard assessment.
- Communicate selection decisions to each affected employee.
- Select PPE that properly fits each affected employee.
- Strive to eliminate work site hazards (safety, health or environmental) through modifications to work practices and procedures or by working with the host employer to implement engineering revisions.
- Determine what Personal Protective Equipment (PPE) will be used for the hazards that could not be otherwise eliminated.
- Ensure that OlympiaTech employees are trained in the use, care, storage, maintenance and limitations of the PPE to be used at each jobsite.
- Conduct a Certified Jobsite Hazard Assessment to select the appropriate PPE for hazards that are present. This process may rely on information from the host employer on what hazards have been identified, their magnitude and the methods used to control them.
- Ensure the Certified Hazard Assessment is documented.
- Verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace was evaluated. Documentation shall include the person certifying the evaluation, date(s) of the hazard assessment, which identifies the document as a certification of hazard assessment.

Supervisor

The Supervisor will:

- Ensure that OlympiaTech provided or employee-owned protective equipment is appropriate for the task and is properly cleaned, maintained and stored.

- Ensure that OlympiaTech employees, who are required to use PPE, use it correctly and consistently.
- Ensure that employee-owned protective equipment meets OSHA standards.

Employees

Employees will:

- Be trained in the proper use, cleaning, storage in sanitary place, maintenance and limitations of any protective equipment that will be used at each jobsite.
- Use the appropriate PPE whenever a jobsite hazard is present.

C. ACTION DETAILS

Electrical PPE

- See Electrical Program for PPE assessment and equipment related to electrical hazards.

Respiratory PPE

- See Respiratory Program Section for PPE assessment and equipment related to respiratory hazards.

Hearing PPE

- See Hearing Protection Program Section for PPE assessment and equipment related to noise level hazards.

General PPE

- All OlympiaTech employees, while on the jobsite, will wear safety helmets/hard hats, safety glasses with side shields, heavy duty work boots and proper work clothing.
- Specialized PPE will be provided as needed by the OlympiaTech for their employees at no cost. This may include, but is not limited to:
 - Head protection
 - Hearing protection devices
 - Fall protection devices
 - Hand protection equipment
 - Life-lines and harnesses
 - Respirators
 - Specialty footwear
 - Specialty illumination equipment
 - Any other specialty equipment or devices required to be safe on the jobsite
 - Rubber insulating gloves and protectors
 - Rubber insulating blankets
 - Rubber insulating line hose

- Rubber insulating hoods
- Insulating shields and/or barriers
- Rubber insulating sleeves, if required
- Rubber matting for use around an electrical apparatus.
- PPE that has been modified in a way that is not supported by the manufacturer or that reduces its effectiveness will be repossessed, repaired or destroyed.
- Any PPE that has been previously worn or used will not be reissued to another employee until it has been inspected, repaired, if necessary, according to manufacturer's recommendations, cleaned, sterilized and repackaged.

Employee Compliance and Enforcement

- The Supervisor will conduct daily field inspections to ensure OlympiaTech employees are wearing all necessary PPE.
- All PPE will meet or exceed the applicable requirements of NIOSH, OSHA, ANSI and/or any other applicable agency or standard.
- PPE equipment found to be defective will not be not used.

Employee Safe Work Practices

Employees will follow these safety rules:

- An appropriate hard hat will be worn when there is danger of impact, falling or flying objects or electrical shock
- Impact-resistant safety glasses with side shields will be worn when there is danger of materials striking the eye
- Non-vented safety goggles will be worn if working with materials or chemicals that could damage the eyes
- Face shields will be worn, as needed, to protect the face from flying objects
- Proper shoes or boots will be worn to protect against foot injuries
- Protective clothing with the proper fitting and sizing, appropriate for the task at hand, will be worn, where specified in the job briefing document.

D. TRAINING

Employee training will include, but not be limited to:

- Recognizing hazards on the jobsite that require PPE
- How to determine the appropriate PPE to avoid potential injuries,
- The correct way to inspect, put on, remove, use, care, store, clean and maintain each piece of PPE, as needed and will be documented.
- The limitations of the PPE OlympiaTech employees are required to use.

- Employees will be re-trained on the correct way to inspect, put on, remove, use, care, store, clean and maintain each piece of PPE as needed or in the event that the employee is displaying a lack of knowledge on the subjects.

RADIO FREQUENCY PROGRAM

A. PURPOSE AND SCOPE

The purpose of this program is to provide employees and site users with the basic information for assuring a safe and healthful workplace free from recognized radio frequency hazards, which may cause injury or illness. Each employee is expected to follow the guideline provided within this program. The information in this program applies to all employees and site users working on or near, 470 MHz AND ABOVE towers or antennas and associated equipment.

Electromagnetic radiation consists of waves of electric and magnetic energy moving together (i.e., radiating) through space at the speed of light. Taken together, all forms of electromagnetic energy are referred to as the electromagnetic "spectrum." Radio waves and microwaves emitted by transmitting antennas are one form of electromagnetic energy. They are collectively referred to as "radiofrequency" or "RF" energy or radiation. Often the term "electromagnetic field" or "radiofrequency field" may be used to indicate the presence of electromagnetic or RF energy.

Different forms of electromagnetic energy are categorized by their wavelengths and frequencies. The RF part of the electromagnetic spectrum is generally defined as that part of the spectrum where electromagnetic waves have frequencies in the range of about 3 kilohertz (3 kHz) to 300 gigahertz (300 GHz). Microwaves are a specific category of radio waves that can be defined as radiofrequency energy where frequencies range from several hundred MHz to several GHz.

The energy levels associated with RF and microwave radiation are not great enough to cause the ionization of atoms and molecules. Other types of nonionizing radiation include visible light, infrared radiation, and other forms of electromagnetic radiation, which also have relatively low frequencies. Often the term "radiation" is used to apply to ionizing radiation such as that associated with nuclear power plants. Ionizing radiation should not be confused with the lower-energy, non-ionizing, radiation with respect to possible biological effects, since the mechanisms of action are quite different.

"Ionization" is a process by which electrons are stripped from atoms and molecules. This process can produce molecular changes that can lead to damage in biological tissue, including effects on DNA, the genetic material. This process requires interaction with high levels of electromagnetic energy. Those types of electromagnetic radiation with enough energy to ionize biological material include X-radiation and gamma radiation. Therefore, Xrays and gamma rays are examples of ionizing radiation.

Radio frequencies constitute part of the overall electromagnetic spectrum. Cellular radio services transmit using frequencies between 800 and 900 megahertz (MHz). It should be noted that the radio towers are operating on the 470 MHz and above level and all are gated and locked and have proper signage attached.

Certain behavior characteristics of Electromagnetic (EM) fields dominate at one distance from the radiating antenna, while a completely different behavior can dominate at another location. Electrical engineers define boundary regions to categorize behavior characteristics of electromagnetic fields as a function of distance from the radiating source. These regions are: the "Near-Field," "Transition Zone," and "Far-Field". The regional boundaries are usually measured as a function of the wavelength.

B. RESPONSIBILITIES

Supervisors

- Shall be responsible for initiating disciplinary action against employees who do not follow the guidelines within this program.
- Shall be responsible for the implementation and enforcement of all aspects of the program. Duties are as follows:
 - a) Initially evaluating RF sources
 - b) Maintaining RF source inventory
 - c) Evaluating safety procedures
 - d) Evaluating existing RF safety program documentation
 - e) Disseminating RF safety policy
 - f) Providing authoritative advice
 - g) Reviewing/authorizing RF surveys and control measures
 - h) Authorizing designated RF safety personnel
 - i) Coordinating RF safety awareness
 - j) Conducting/arranging regular site audits
 - k) Conducting annual RF hazard survey policies and procedures review
 - l) Managing policy and procedures breaches, including accidental over exposure incidents
 - m) Developing/approving RF hazard assessment
 - n) Arranging for regular survey/monitoring equipment calibration
 - o) Ensuring proper documentation control and central archiving

Medical Surveillance

- Medical exam is appropriate for “accidental” exposures defined as an exposure above trigger levels identified in Tables 1 & 2. Symptoms of accidental exposure can be described as but not limited to the following: immediate sensation of intense heating of the parts of the body in the electromagnetic field followed by a variety of symptoms and signs, which included pain, headache, numbness, and paresthesia, malaise, diarrhea, and skin erythema.
 - Medical surveillance will consist of an annual medical evaluation by a licensed healthcare professional and it must contain a means to report the occurrence of RF burns, implanted medical devices (e.g., copper IUD), or the sensation of non-routine heating as a means of identifying potential problem areas.

C. TRAINING

All affected employees and site users-managers will be trained on radio frequency safety upon initial assignment and refresher training on a periodic basis. The training will consist of the information contained within this procedure. RF safety and health training will be conducted

to ensure that all employees understand the RF hazard to which they are exposed and the means by which the hazard can be controlled. Retraining and/or periodic refresher will be conducted when warranted by an incident or other evidence of the employee's lack of understanding or compliance with the program.

- General Awareness Training
 - Awareness Training is for “all persons” with access to areas where RF exposure may exceed applicable limits (commensurate with exposure situation). All employees/contractors are required to go through awareness training.
- Training Program Elements
 - a. Introduction to RF sources and RF Safety (RF generation, propagation, transmission, antennas, etc.)
 - b. Discussion of biological effects/hazards
 - c. Explanation of standards/regulations and basis for them
 - d. Information about potential excessive exposure situations and their controls
 - e. RF safety program elements
 - f. Instruction on how to respond to over-exposure incidents
 - g. Information about potential RF susceptibility of medical devices/implants
 - h. Additional information sources
 - i. Personal monitoring vs. area monitoring
 - j. Lock out tag out.
- Fully Aware Training
 - Fully Aware Training is for “all persons” working on or in close proximity (roof-mounted antennas) to areas where RF exposure may exceed applicable limits (commensurate with exposure situation (See Table 1)). Trainees will receive written and verbal information on how to control or mitigate radiation exposures.
- Training Program Elements
 - Introduction to RF sources licensed and un-licensed and RF Safety (RF generation, propagation, transmission, antennas, etc.)
 - b. Discussion of biological effects/hazards
 - c. Explanation of standards/regulations and basis for them
 - d. Information about potential excessive exposure situations and their controls
 - e. RF safety program elements
 - f. Instruction on how to respond to over-exposure incidents
 - g. Information about potential RF susceptibility of medical devices/implants
 - h. PPE training – donning, doffing, inspection
 - i. How to use administrative and engineering controls to reduce exposure levels

D. EXPOSURE/EFFECT

Biological effects can result from animal or human exposure to RF energy. Biological effects that result from heating of tissue by RF energy are often referred to as "thermal" effects.

- Effects
 - It has been known for many years that exposure to very high levels of RF radiation can be harmful due to the ability of RF energy to heat biological tissue rapidly. This is the principle by which microwave ovens cook food.
 - Exposure to very high RF intensities can result in heating of biological tissue and an increase in body temperature. Tissue damage in humans could occur during exposure to high RF levels because of the body's inability to cope with or dissipate the excessive heat that could be generated.
 - Two areas of the body, the eyes and the testes, are particularly vulnerable to RF heating because of the relative lack of available blood flow to dissipate the excessive heat load.
 - At relatively low levels of exposure to RF radiation, (i.e. levels lower than those that would produce significant heating) the evidence for production of harmful biological effects is ambiguous and unproven.
- Exposure
 - The exposure limits used by the FCC are expressed in terms of Specific Absorption Rate (SAR), electric and magnetic field strength and power density for transmitters operating at frequencies from 300 kHz to 100 GHz.
 - SAR is the rate of energy absorption in tissue, measured in watts per kilogram of tissue. Limits incorporate a safety factor of 10 (Most Western Limits are 0.4 W/kg).
 - The exposure limits used by OSHA 1926.54(l) are as follows: Employees shall not be exposed to microwave power densities in excess of 10 milliwatts per square centimeter.
 - Controlled environment for RF purposes is an area where human activity is subject to control and accountability as established by a written RF Safety Program.
 - Occupational limits apply to persons who are exposed as a consequence of their employment and those persons have been made fully aware of the potential for exposure and can exercise control over their exposure. (designated as RF Safety Trained)
- Ancillary Hazards – It should be noted that these additional hazards may exist at these locations: Electric shock, Ionizing Radiation, Mechanical, Eye Hazards, Fall from heights and/or through openings, Confined Space, Trip Hazards, Welding/cutting operations, Heat stress, Toxic chemicals/gases, Cooling refrigerants, Optical Radiation sources

(A) Limits for Occupational/Controlled exposure				
Frequency Range (MHz)	Electric Field Strength (v/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging time (min)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	----	----	f/300	6
1500-100,000	----	----	5	6
f = frequency in MHz		* = Plane-wave equivalent power density		
(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (v/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging time (min)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	----	----	f/1500	30
1500-100,000	----	----	1.0	30
f = frequency in MHz		* = Plane-wave equivalent power density		

E. PROGRAM ELEMENTS

- Elements
 - Identification and inventorying of exposure sources.
 - Potential hazards.
 - Characterization of sources.
 - Ancillary hazards consideration/evaluation.
 - Suitable control application.
 - Training for potentially exposed individuals as well as for the RF Safety Officer

Signs

Per OSHA, “the RF hazard areas shall be clearly marked with appropriate signs, barricades, etc. such that any worker who has access to the facility will be alerted not to occupy the hazardous location.

- Signs shall be of standard design and shape meeting ANSI C95.1
- Signs shall be of sufficient size to be recognizable and readable from not less than 25 feet away.
- Signs shall be placed where there is a potential for that exposure might exceed occupational limits.
- Signs shall be placed anywhere exposure limits might exceed public limits
- Signs shall be placed anywhere equipment is in use and under normal operation and maintenance and where there are no public or occupational exposure issues.



F. ANNUAL PROGRAM REVIEW

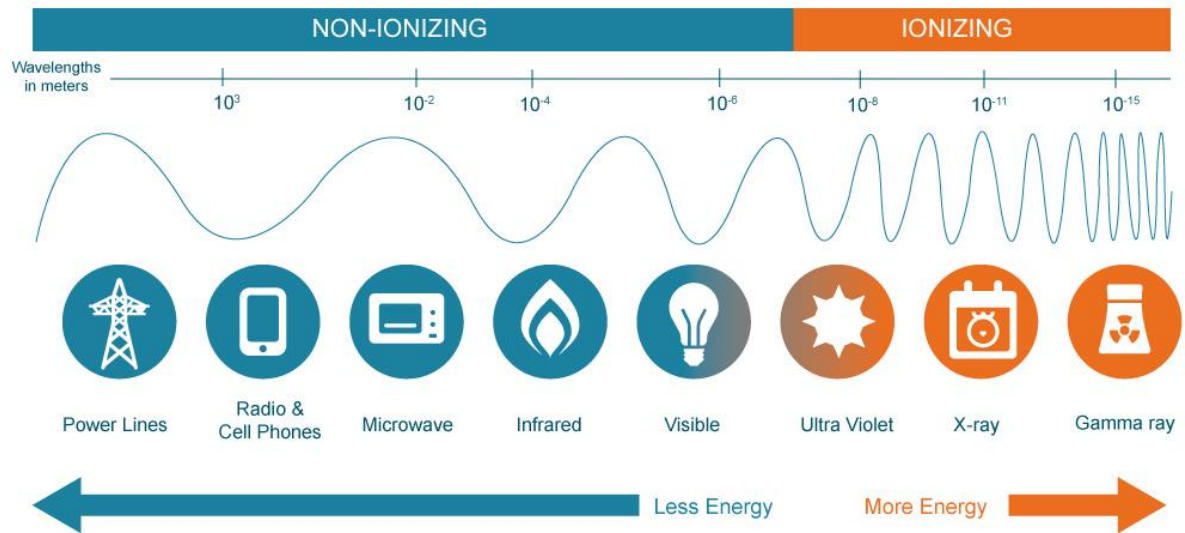
An annual check of all RF facilities must be completed in order to insure changes have not occurred over the past year. Periodic RF screening measurements are not necessary at the present time due to the configuration of the RF sources.

In cases where changes have occurred, screening measurements must be conducted, by a certified contractor, in order to insure compliance and to ensure that no employees are being over exposed

G. REFERENCES

There are numerous safety references, which pertain to radio frequency including, but not limited to:

- American National Standards Institute (ANSI) Standards, ANSI/IEEE C95.1-1992, Evaluating Effects of Radio Frequency Radiation on the Environment
- Occupational Safety and Health Administration (OSHA) Standards
- OSHA 29 CFR 1910.147, Lockout/Tagout
- Occupational Safety and Health Administration (OSHA) 1910.97 - NonIonizing Radiation
- Federal Communications Commission (FCC) Office of Engineering and Technology (OET) Bulletin – 65: Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields Guidance Document



RESPIRATORY PROTECTION PROGRAM

A. PURPOSE AND SCOPE

This program is developed to comply with 29 CFR 1910.134 and 1926.103 - Respiratory Protection to ensure the protection of OlympiaTech employees while using respiratory protection. This program is designed for jobsites where respirators are used on a voluntary basis. If a hazard assessment or information from the host employer indicates that respirator use is required, this program is not adequate.

B. RESPONSIBILITIES

Program Administrator or Safety Director:

Medical Evaluator's Phone Number:

Program Administrator or Safety Director

The Program Administrator or Safety Director will:

- Implement and operate a periodic evaluation of the Respiratory Protection Program.
- Determine when voluntary use of respirators or filtering face pieces (dust masks) can be used.
- Supply respirators and/or dust masks at the request of OlympiaTech employees when respirator use is not required, if their use will not create a hazard.
- Be responsible for determining the potential need for respirators at each work location. OlympiaTech employees will rely mainly on hazard assessment information provided by the Host Employer regarding the potential need for respirators.
- Conduct fit tests before voluntary respirator use is permitted. Retesting will be done annually or if there is a physical change that could affect respirator use. Respiratory equipment will be provided to all employees that may be exposed to harmful vapors and oxygen deficient atmospheres
- Train OlympiaTech employees to recognize hazards that require respirator use and maintenance of respirators.

Supervisor

The Supervisor will:

- Ensure that OlympiaTech employees who use respirators voluntarily are medically fit to do so; as determined by a medical evaluation.

Employees

Employees will:

- Use and maintain respirators according to their training.
- Immediately report any medical signs or conditions related to respirator use.
- Be trained on respirator use, care and maintenance.

C. ACTION DETAILS

- Voluntary Use of Respirators and/or Filtering Face
- Pieces (Dust Masks)
- Workers may wear respirators to avoid exposure to hazards or to provide an additional level of comfort and protection, even if the amount of hazardous substance does not exceed the limits set by OSHA standards.
- Respiratory equipment is provided by OlympiaTech to all affected employees at no cost.
- When voluntary use of respirators or filtering face pieces (dust masks) is allowed, the employee agrees to the following requirements:
- The OlympiaTech employees will read and comply with the following:
 - Read and follow all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
 - Note: If a respirator is used improperly or not kept clean, the respirator itself can become a hazard to you.
 - Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and the level of protection it provides.
 - Not wear respirators into atmospheres containing contaminants for which the respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect against gases, vapors, or very small solid particles of fumes or smoke.
 - Keep track of the assigned respirator so that you do not mistakenly use someone else's respirator.
 - Be medically evaluated prior to respirator use.
 - Be responsible for properly cleaning, storing and maintaining their respirators.

Medical Evaluations

Medical evaluations will be given to determine the employee's ability to wear a respirator. This evaluation is confidential and will not be seen by OlympiaTech employees. The evaluation includes a medical questionnaire to be completed by the employee and returned to the Medical Evaluator. The Medical Evaluator will contact the employee if a medical exam is required. Medical exams will be necessary if an employee responds "yes" to Questions 1 through 8 on the questionnaire or:

- The employee reports medical signs or conditions related to respirator use
- At the request of a supervisor, Physician or Licensed HealthCare professional (PLHCP) or a respirator program administrator

- When observations or information indicate a need for an evaluation
- When a change in the workplace conditions increase the physiological burden on an employee
- Exception: This does not apply to an employee whose only use of respirators involves the voluntary use of filtering face pieces (dust masks).
- Medical evaluations will be kept on file in personnel records and by the medical evaluator.

Respirator Selection

- Respirators will be selected based on Hazard Assessment that are NIOSH–certified and used in accordance with the conditions of certification. A representative number of respirator models and sizes will be available to ensure that OlympiaTech employees will be able to select a comfortable, properly fitted respirator.

Fit Testing

Note: this is an option that can be selected by OlympiaTech employees.

- All OlympiaTech employees wearing a tight fitting facepiece respirator must pass a Qualitative or Quantitative fit test.
- The fit test will be given after the medical evaluation is completed and before respirator use is permitted. Re- testing will be done annually or when there is a change in physical condition that could affect respirator fit.

Respirator Use

- No employee will be allowed to wear a tight-fitting facepiece respirator with a beard or when any facial hair interferes with the face to facepiece seal of the respirator or with the valve function.
- Any other PPE must be worn so it doesn't interfere with the face to face piece seal. An employee must perform a user seal check every time a respirator is put on.
- Vapor or gas cartridges or filters will be replaced based on the end of service life indicator. If no indicator is provided; the OlympiaTech employees will change them, as scheduled.

General Maintenance

- Respirator maintenance will be done in accordance with manufacturer's recommendations.
- OlympiaTech employees will be given time to and will be responsible for the cleaning, disinfecting, inspection and storage of respirators.
- Respirators will be inspected before each use and during routine cleaning.
- All respirators found to be defective must be brought to the attention of the Supervisor or the Safety Director and will be removed from service and discarded or tagged as defective.

D. TRAINING

- Before wearing a respirator in the workplace, OlympiaTech employees will receive training on the respiratory hazards to which they are exposed, the proper use, care, and maintenance of respirators, and the limitations of the respirator.
- Each employee must be able to demonstrate a working knowledge of:
 - Respirator function and usefulness
 - The effects of improper fit, usage, and maintenance on a respirator's effectiveness
 - Limitations and capabilities of the respirator
 - The correct way to inspect, put on, remove, use and check the seals of the respirator
 - Proper respirator cleaning, maintenance and storage, as appropriate.
- Proper training will be done initially. Retraining will be done at least annually or when:
 - There are changes in the workplace or the type of respirator being used
 - Employee use indicates a lack of knowledge or the proper use.

E. PROGRAM EVALUATION

- A checklist will be used to evaluate the effectiveness and implementation of the Respiratory Protection Program.
- The program will be modified and additional training added whenever there is an indication there is improper use or lack of knowledge or respiratory protection.
- OlympiaTech employees will provide feedback on the program's effectiveness.

F. RECORDKEEPING

The following records will be kept on file, as required:

- Fit tests, if required,
- Respirator training,
- Medical recommendation for respirator use, and
- All other documents that support the written program.
- Example: any air monitoring records and information on hazard assessments provided by host employers.

RIGGING MATERIAL HANDLING PROGRAM

A. PURPOSE AND SCOPE

The goal of the Rigging/Material Handling Program is to reduce the number of material handling injuries and to increase efficiency. This can be accomplished by minimizing material handling by combining or eliminating operations. This written program works to create and maintain a safe work environment for OlympiaTech employees as required by 29 CFR 1926 Subparts H, O, and CC.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Determine mechanical means for moving materials when possible in order to avoid injuries such as muscle pulls, strains and sprains.
- Have cranes, derricks, hoists, powered industrial trucks and conveyors handle loads too heavy or bulky to handle manually.
- Ensure required inspections are performed and documentation maintained for all cranes and derricks.
- Ensure that cranes and derricks are operated by competent persons.
- Ensure protection is made available from falling hazards.
- Ensure employee training is provided on the selection, inspection, use and maintenance of material handling equipment.
- Ensure that before assigning OlympiaTech employees to jobs that require heavy and/or frequent lifting, they have been cleared as physically able to perform these tasks.

Supervisor

The Supervisor will:

- Plan for the receipt, shipment and/ or storage of materials.
- Ensure materials are kept at a proper distance from hoist-ways, inside floor openings and exterior walls.
- Ensure materials are stacked according to load limits, keeping passageways clear and arranged to prevent sliding, falling or collapse.
- Ensure that when using any manual handling equipment OlympiaTech employees will follow all manufacturers' instructions.

Employees

Employees will:

- Be trained in the selection, inspection, use and maintenance of material handling equipment.
- Use mechanical means to move material whenever possible.

- Follow manufacturers' instructions when using manual material handling equipment.
- Be trained to recognize hazards and to protect themselves and prevent accidents.
- Recognize and respond to signs, signals, barricades and other forms of warning found at the jobsite.

C. MATERIAL HANDLING ACTIONS

Handling and Storage

- If a load is too large for one employee, two are to be assigned to the task or material handling equipment supplied.
- PPE, such as gloves, hand leathers or other hand protectors, are to be used to prevent hand injuries.
- Maximum safe floor loads are to be posted and never exceeded.
- Materials are to be kept clear of passageways, properly sorted and prevented from sliding, falling or collapsing.
- Nails are to be bent or removed before stacking lumber for disposal.
- Metal banding or packaging is not to be removed until the material is ready to be used.
- Lumber piles will not exceed 20 feet in height (or 16 feet for manually handled lumber).

Slings

- Rigging is to be inspected prior to use on each shift and as needed during a shift.
- Defective rigging and slings will be removed from service, tagged and disposed of
- The rigging's load capacity is never to be exceeded. When selecting a sling, consider the size and type of load, as well as environmental conditions.

Safe Lifting Practices

- The weight and balance of the load must be correctly determined before lifting.
- Before lifting make certain the sling is properly secured and that the load is not lagged, clamped or bolted to the floor.
- The angle of the sling should be kept as close to 90° (vertical) as possible.
- Never allow the load to drag along the ground.
- Watch a load at all times while it is in motion.
- Never allow more than one person to control the lift or to give signals except to warn of hazards.
- Once the lift is completed, the sling should be cleaned, inspected for damage and stored in a clean, dry place (hung on walls or racks).

Back Safety When Lifting

To help prevent back injuries that occur from lifting, the proper lift technique involves the following steps:

- Get close to the object. Place one foot along-side the object in the direction you will be carrying the object. Place the other foot behind the object. Feet should be securely planted with the object between your knees.
- Bend at the knees to go down to the object.
- Keep your back straight. If you maintain your pelvis in a level stance this will help to keep your back straight and prevent twisting.
- Get a secure grip on the object.
- Contract or tighten your diaphragm and stomach muscles. Maintain this position during the lift.
- Lift the object in a steady motion with your legs keeping the object close to your body. Try not to jerk when you lift.

D. TRAINING

Employee training will include, but is not limited to, the following:

- Proper lifting techniques to help minimize muscle, back and hernia injuries
- How to recognize hazards and to protect themselves and prevent accidents
- Selection, inspection, use and maintenance of material handling equipment
- How to properly position and stack materials
- Recognition of and response to signs, signals, barricades and other forms of warning found at a jobsite.

SCAFFOLDS PROGRAM

A. PURPOSE AND SCOPE

Falls are the leading cause of fatalities in the construction industry and represent a major hazard in all industries. This program is in accordance with OSHA's Scaffold Standard 29 CFR 1926 Subpart L which includes platform and suspended scaffolds as well as aerial lifts. It establishes those responsibilities and is a basic component of OlympiaTech's safety and health program.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Ensure that equipment is provided for safe erection, dismantling, and use of scaffolds, including fall protection systems as needed.
- Ensure scaffolds are erected in accordance with Subpart L of 29 CFR 1926, OSHA Scaffold Standard.
- Make certain that scaffolds which are beyond the scope of the conditions described in 29 CFR 1926
- Subpart L will be designed by a registered, professional engineer.
- Provide a competent person to perform inspections and ensure compliance with Subpart L, OSHA's Scaffold Standard.

Supervisor

The Supervisor will:

- Ensure that damaged or unsafe scaffolds and/or components will be clearly tagged "DO NOT USE" and removed from service.
- Ensure that scaffolds constructed by other trades which OlympiaTech employees are instructed to use are inspected and approved by a competent person before OlympiaTech employees are allowed to use them.
- Make certain all OlympiaTech employees are trained in the safe erection, dismantling, and use of scaffolds.
- Ensure that current operating and safety manuals are placed in each lift to be used by lift operators.

Employees

Employees will:

- Participate in all training programs associated with the erection, dismantling and use of scaffolds.
- Obey the rules for the safe erection, dismantling, and use of scaffolds as identified in Subpart L, OSHA Scaffold Standard.

- Check with OlympiaTech 's competent person each day before using a scaffold to ensure it has been inspected and approved.
- NOT USE scaffolds erected by other trades unless approved by OlympiaTech 's designated competent person.
- Report all hazards immediately to their supervisor.
- Inspect and operate lifts according to the manufacturers' operating and safety manuals
- Receive training in recognizing the hazards associated with the operation of and/or working near aerial and scissor lifts.

C. AERIAL LIFTS

- Aerial lifts include boom-supported aerial platforms, such as cherry pickers or bucket trucks. The major causes of fatalities are falls, electrocutions, and collapses or tip overs. To avoid these potential fatalities, the following safe work practices will be observed:
- Elevating work platforms will be maintained and operated in accordance with the manufacturer's instructions.
- Hydraulic, mechanical, or electrical safety devices will not be overridden.
- Equipment will not be moved with workers in an elevated platform unless this is permitted by the manufacturer.
- Workers will not be allowed to position themselves between overhead hazards, such as joists and beams, and the rails of the basket. Movement of the lift could crush the worker(s).
- A minimum clearance of at least 10 feet, or 3 meters away from the nearest overhead lines will be maintained.
- Power lines, wires and other conductors will always be treated as energized, even if they are de-energized, covered or appear to be insulated.
- A body harness or restraining belt with a lanyard attached to the boom or basket to prevent the worker(s) from being ejected or pulled from the basket will be used.
- Brakes will be set and wheel chocks used when on an incline.
- Outriggers will be used, if provided.
- Load limits of the equipment will not be exceeded. The combined weight of the worker, tools, and materials will be considered in all calculations.

D. SCAFFOLDS

- When scaffolds are not erected or used properly, fall hazards can occur. To avoid these potential accidents, the following safe work practices will be observed:
- Scaffolds will be sound, rigid and sufficient to carry its own weight plus four times the maximum intended load without settling or displacement. It will be erected on solid footing.
- Unstable objects, such as barrels, boxes, loose bricks or concrete blocks will not be used to support scaffolds or planks.

- Scaffolds will not be erected, moved, dismantled or altered except under the supervision of a competent person.
- Scaffolds will be equipped with guardrails, mid-rails and toe boards.
- Scaffold accessories, such as braces, brackets, trusses, screw legs or ladders that are damaged or weakened from any cause will be immediately repaired or replaced.
- Scaffolds platforms will be fully planked with no more than a one inch gap between planks. The planking will be scaffold plank grade material or equivalent.
- A “competent person” will inspect the scaffolding and, at designated intervals, re-inspect it.
- OlympiaTech employees will be instructed about the hazards of using diagonal braces as fall protection.
- Scaffolds can be accessed by using ladders and stairwells.
- Scaffolds will be placed at least 10 feet from electric power lines at all times.

E. TRAINING

- OlympiaTech employees that will perform work while on a scaffold will receive training conducted by a qualified person. The training program will cover, at a minimum, the following elements:
 - The ability to recognize the hazards associated with the type of scaffold in use
 - Identification of procedures to control or minimize hazards of scaffold use
 - Proper use of the scaffold and handling of materials on the scaffold
 - The importance of observing the maximum intended load and the load-carrying capacities of the scaffold in use.
 - The ability to recognize the hazards associated with the type of aerial lift in use
 - Identification of procedures to control or minimize hazards associated with aerial lift use.

SILICA EXPOSURE PROGRAM

A. PURPOSE AND SCOPE

OlympiaTech has a duty to protect our workers from overexposure to crystalline silica during a variety of oil and gas related activities. Silica exposure is ranked as an extreme risk in industry work sites. It is identified as a risk requiring special controls, including seeking the advice of experts. Studies show that a variety of oil and gas activities generate airborne contaminants in excess of occupational exposure limits. Effective controls are available to protect workers from harmful exposure.

A combination of control measures will be required to achieve this objective. We commit to being diligent in our efforts to select the most effective control methods available, and to ensure that the best practices, as described in this exposure control plan (ECP), are followed at our work sites.

The work procedures we establish will not only protect our workers, but also any other workers onsite who are not involved in these operations.

This ECP applies to the site prime contractor, at-risk service providers such as the driller, the hydraulic fracturing company, the trucking company, and their employees, as well as any other third party companies and their employees when at risk as determined by a risk assessment.

B. RESPONSIBILITIES

All employees involved in activities that could potentially create silica dust will take specific actions to ensure that a hazard is not created.

All OlympiaTech Employee Responsibilities:

- Read, understand, and adhere to the controls set out in this exposure control plan when at risk. A copy of this plan, or a similar one, must be present on every oil and gas site where at-risk activities are underway.
- Use the assigned protective equipment in an effective and safe manner. For example, workers must be clean-shaven where a respirator seal is established with the worker's face.
- Follow established work procedures as directed by the supervisor.
- Report any unsafe conditions or acts to the supervisor.
- Report any exposure incidents or any signs or symptoms of illness from silica exposure to the employer.
- The workers will acknowledge that they understand the Written Safety Program's requirements prior to commencing their work activities.
- Supervisor Responsibilities:
 - Provide adequate instruction to workers on the hazards of silica exposure associated with their respective oil and gas activity.
 - Select and implement the appropriate control measures.

- Ensure that workers using respirators have been properly trained and fit-tested, and that the results are recorded.
- Make sure that work is conducted in a manner that minimizes and adequately controls the risk to workers and others. This includes ensuring workers use appropriate engineering controls as well as administrative controls; they should only wear the necessary PPE as the last line of defense.
- Site supervisors are responsible for making sure that workers have been trained in this exposure control plan. They must ensure that workers understand the plan's expectations, as well as enforce it on the work site.

Employee Responsibilities:

- Ensure that, at a minimum, the Written Safety Program meets or exceeds the prime contractor's Written Safety Program and provincial regulatory requirements.
- Ensure that the materials and other resources to fully implement and maintain this Written Safety Program are readily available.
- It is Mid-State, Inc.'s responsibility to provide required materials and documentation in order to comply with other applicable health and safety legislation (e.g. safety data sheets).
- Ensure supervisors and workers are educated and trained in the hazards of silica exposure and to work safely with silica.
- Maintain written records of training (e.g. proper use of respirators), fit-test results, crew talks, and inspections (of equipment, PPE, and work methods and practices).
- Conduct an annual review (or more often if conditions change) of the Written Safety Program's effectiveness. This includes a review of the available control technologies to ensure they are selected and used when practical.
- Coordinate work with other employers to ensure a safe work environment.

OlympiaTech contractors and their site personnel need to make sure an exposure control plan is present on site and enforces compliance. Contractors need to select a service provider based on which available control strategies, like engineering controls, it employs to minimize exposures.

C. Material Assessment:

Any time there is a potential for silica containing materials to be involved in a project, sources of silica must be assessed prior to disturbing. Crystalline silica occurs naturally in the earth's crust and is a basic component of sand, concrete, brick, asphalt, granite, some blasting grit and wall spackling materials. Employees can be exposed to silica when conducting activities such as:

- Abrasive blasting
- Jack hammering
- Concrete crushing
- Hoe ramming

- Rock drilling
- Mixing of concrete or grout
- Concrete drilling
- Sawing concrete or bricks
- Chipping or scarifying concrete
- Rock crushing
- Moving or dumping piles of concrete, rock or sand
- Demolition of concrete or brick
- Using coatings containing silica
- Removing coatings containing silica

If airborne silica is expected to be generated during the project, all safety precautions are followed to minimize exposure to airborne silica dust.

D. EXPOSURE LIMITS

When silica containing materials are agitated, disturbed, moved, or otherwise handled, silica exposure can occur. Worker exposure is primarily limited to inhalation. The presence of silica dust on skin, hair, clothing and PPE represents the possibility of this dust being re-entrained into the air and then subsequently inhaled by the worker or other workers. Silica may also represent a mechanical abrasion hazard to the eye when concentrations are very elevated.

In general, inhalation exposure to silica can occur in three ways as a function of:

- the work location;
- the activity (task); and/or
- the occurrence of unplanned events.

Silica dust is not ordinary dust! Very small particles can penetrate deep into the lung. Different types and sources of silica may have different size ranges. For example, dust generated from hydraulic fracturing may be comprised almost entirely of respirable particles. In contrast, silica dust generated while cutting concrete generally has a wider range of particle sizes.

The Occupational Health & Safety Regulation (OHSR) lists an occupational exposure limit (OEL) for respirable crystalline silica (including quartz) of 0.025 milligrams per cubic meter hours (mg/m^3). This is a concentration to which nearly all workers could be exposed for eight hours a day, five days a week, without adverse health effects. However, as a suspected carcinogen, crystalline silica is also an ALARA substance, and exposures must be reduced to levels As Low As Reasonably Achievable below the OEL.

The following factors impact the degree of exposure risk on site.

- Time – How long is the duration of the exposure? Cumulative exposure is a better predictor of silica disease. Exposure levels are full-shift time-weighted average (TWA) like 8-hour Exposure Levels (EL). Some task-based exposures may last only minutes, while others may last the entire work shift.

- Proximity – How close are you to the emission source? The closer you are to the emission source, the higher the airborne silica concentration is likely to be. As a general rule of thumb, keep sources of exposure at least an arm's reach away.
- Relative Dustiness – How dusty is the material or process? The dustier the material is, the more airborne dust is likely to be generated. It is important to recognize that the manner in which the material is disturbed can impact the dustiness.
- Energy – Is energy being imparted into the silica-containing material? The more energy, the greater the airborne concentration of silica.
- Quantity in use – How much is being used?
- Percentage Silica – What is the bulk silica percentage? Higher silica concentrations generally result in more risk, especially for pure products.
- Ventilation – Can silica build up in the air? The amount of ventilation can make a significant difference to exposures. Exposures in well-ventilated environments, like wide-open windy outdoor locations, may be less significant than exposures in poorly ventilated indoor environments.

E. RISK ASSESSMENT

OlympiaTech will use a variety of methods to assist with the assessment of (possible and actual) silica exposures.

These methods will include, but may not necessarily be limited to:

- Reviewing data/reports available in the public domain (i.e. Information available through regulatory agencies and industries.
- Regularly consulting with the Safety Resources/Safety Managers from firms who perform similar work.
- Implementing a suitable respirable silica exposure monitoring program.

This program will ensure that over time OlympiaTech has quantifiable silica exposure data available that is representative of all regularly occurring, as well as reasonably foreseeable work activities. Exposure monitoring will generally be conducted in house.

F. CONTROL METHODS

When determining measures to reduce or eliminate worker exposure to silica dust, OlympiaTech will generally select a combination of controls, listed in order of preference:

- Elimination and Substitution.
- Engineering.
- Administrative.
- Personnel Protection Equipment (PPE).

Substitution and Elimination:

Whenever possible, OlympiaTech will substitute products containing silica with products that do not contain (or contain a lower percentage of) crystalline silica. While there have historically

been few “substitution” options available, OlympiaTech recognizes the importance of planning work in order to minimize the amount of silica dust generated. During the planning phases of a project, OlympiaTech will advocate for the use of methods that reduce the need for cutting, grinding, or drilling of concrete surfaces.

Engineering Controls:

Engineering controls are those controls which aim to control or otherwise minimize the release of crystalline silica. Two engineering control options are available to OlympiaTech in many circumstances. These include the Local Exhaust Ventilation (LEV) and Wet Dust Suppression (WDS) systems.

LEV Systems:

Tools/appliance specific LEV systems are available on some tools/appliances. Such LEV systems are generally comprised of a shroud assembly, a hose attachment, and a vacuum system. Dust-laden air is collected within the shroud, drawn into the hose attachment, and conveyed to the vacuum, where it is filtered and discharged. “Large scale” LEV systems, such those available on some Vacuum Trucks and Mobile Sweepers, may also be employed (at times) on OlympiaTech projects.

When/if LEV systems are used, OlympiaTech will employ the following systems and safe work practices:

- Vacuum attachment systems that capture and control dust at its source whenever possible.
- Dust control systems will be maintained in optimal working condition.
- Grinding wheels will be operated at the manufacturer’s recommended RPM (operating in excess of this can generate significantly higher airborne dust levels).
- HEPA or good quality, multi-stage vacuum units (approved for use with silica dust) will be used in accordance with the manufacturer’s instructions.
- Whenever possible, concrete grinding will be completed when the concrete is wet the dust will be significantly reduced.

WDS Systems:

Unlike LEV systems, many tools/appliances at OlympiaTech are equipped with WDS systems (i.e. on the Milling equipment, sweeper equipped Bobcats, as well as attachments on various handheld/portable, abrasive/cutting equipment). When WDS Systems are not available, similar effects can also be achieved by manually wetting the surface.

When WDS systems are used, OlympiaTech will employ the following systems and safe work practices:

- If water is not readily available on the specific OlympiaTech project, the project supervisor will arrange to have a water tank delivered to the site for use.
- Pneumatic or fuel (i.e. gasoline) powered equipment will generally be used instead of electrically powered equipment if water is the method of dust control, unless the electrical equipment is specifically designed to be used in such circumstances.

- Pressure and flow rate will be controlled in accordance with the tool manufacturer's specifications.
- When sawing concrete, tools that provide water directly to the blade will be used if possible.
- Wet slurry will be cleaned from work surfaces when the work is complete, if/when necessary.

Whenever it is possible, employees will substitute products containing silica with products that do not contain silica or contain a lower percentage of crystalline silica.

Administrative Controls:

Controls that aim to control or otherwise minimize the release of silica through the use of work procedure and work methods, rather than by affecting the actual physical work. Common examples of administrative controls include, but are not limited to:

- Posting of warning signs.
- Rescheduling of work as to avoid the activities of others.
- Relocating unprotected workers away from dusty areas.

When administrative controls are used, OlympiaTech , Inc. will employ the following systems and safe work practices:

- In conjunction with the Owner/Prime Contractor, suitable exposure control strategies (both within and outside OlympiaTech , Inc's capabilities/responsibilities) will be discussed and determined. As necessary/appropriate, supplemental (to this policy/procedure) project and task specific Exposure Control Plans will be developed.
- Suitable housekeeping, restricted work area, hygiene practices, training and supervision procedures/standards will be determined and implemented on OlympiaTech projects.
- As appropriate, barriers will be erected around known silica dust generating activities, and/or warning signs will be posted.
- As able, work activities will be scheduled to minimize the silica related effect on, and from, others.

Personal Protective Controls:

When used in conjunction with the other (i.e. Engineering and Administrative) controls elsewhere identified, personal protective equipment and clothing can help further reduce our employee's exposure to silica dust.

An air purifying respirator fitted with HEPA cartridges is the most common piece of PPE that would be used by OlympiaTech employees to minimize exposure to silica dust. Dependent on the effectiveness of the other (i.e. engineering) control measures employed, either a "full face piece" or "1/2 facepiece" respirator would be used by personnel (In the majority of situations a 1/2 face respirator will be used. When working indoors or in other areas with poor ventilation, a full face respirator may be required). Both of these respirators are "seal dependent", and thus the users must be "fit tested" and clean shaven where the respirator seals to the face.

In addition to respiratory PPE, protective clothing (i.e. disposable/washable coveralls) may be used and/or required to help prevent the contamination of the worker's personnel clothing.

These respirators are provided to OlympiaTech employees by OlympiaTech when exposed to respirable crystalline silica.

G. EDUCATION AND TRAINING

Prior to performing activities or working on project sites where personnel could be exposed to silica dust, OlympiaTech employees will ensure that personnel receive suitable education and training. As necessary, personnel will be trained to a level in which they can demonstrate competency. Refresher training will be given on an as needed basis. Education and training may include:

- The hazards and risks associated with exposure to silica dust
- The signs and symptoms of silica related diseases.
- General and specific silica exposure reduction methods/strategies
- The use of specific pieces of equipment and control systems
- The use and care of respiratory and other personal protective equipment.
- How to seek first aid
- How to report items of concern relating to silica dust.

The education and training detailed will be delivered to Mid-State, Inc.'s employees through a variety of forums, including but not necessarily limited to

- New Employee Orientations.
- Project/Site Orientations.
- Equipment/task specific training
- Start of shift safety talks.
- Notifications and Bulletins

H. Medical Surveillance:

Employees exposed to silica levels above the Permissible Exposure Limit (50 µg/m³), or any employee working with silica who develops signs/symptoms of excessive exposure, should be enrolled in the Medical Surveillance Program.

All medical surveillance will be performed by OSU Employee Health Services and results must be provided to the affected employee and their supervisor within 15 days of the assessment.

The medical surveillance program consists of baseline examination and chest X-ray.

Employees enrolled in the medical surveillance program should be examined annually to track any changes as a result to exposure to silica dust.

SILICA PROGRAM

A. PURPOSE AND SCOPE

OlympiaTech provides a safe and healthy workplace to employees. Health hazards come from breathing in the dust. If crystalline silica becomes airborne through industrial activities, exposures to fine crystalline silica dust can lead to a disabling, sometimes fatal disease called silicosis. The fine particles are deposited in the lungs, causing thickening and scarring of the lung tissue. The scar tissue restricts the lungs' ability to extract oxygen from the air. This damage is permanent, but the symptoms of the diseases may not appear for many years. This program ensures that precaution is taken to protect employees and others from the adverse health effects associated with exposure to silica.

B. RESPONSIBILITIES

All employees involved in activities that could potentially create silica dust will take specific actions to ensure that, as much as practicable, a hazard is not created

Management is responsible for:

- Regularly evaluating new equipment and technologies that become available, as able/appropriate, purchasing the "best available" equipment/technologies (within OlympiaTech ' capabilities). Equipment/technologies with (silica) dust suppression and/or capture technologies will generally be given preference over equipment/technologies that lack such.
- Implementing a silica exposure monitoring program, or otherwise ensuring representative exposure monitoring results are available. The purpose of the program will ensure that OlympiaTech has quantifiable silica exposure data available for all regularly occurring, as well as reasonably foreseeable, work activities.
- Ensuring project and/or task specific Exposure Control Plans (ECPs) are developed communicated and effectively implemented as appropriate.
- Ensuring that all employees (i.e. Managers, Supervisors and Workers) receive the necessary education and training related to this Policy, as well as project/task specific ECPs.
- Maintaining applicable records (i.e. exposure sampling, inspections, respirator fit tests, training records, etc.) in accordance OlympiaTech record retention procedures/practices.

OlympiaTech will conduct a review of this Policy annually.

Supervisors are responsible for:

- Obtaining a copy of the project/task specific ECPs(and/or other similar such information), and ensuring such are made available at each work site.
- Ensuring that all the tools, equipment, PPE and materials (including water) necessary to implement the ECP is available (and in good working order) prior to allowing work activities to commence.

- Ensuring that all workers (under the supervisor's direction and control) have received the necessary education and training. As appropriate, each supervisor must ensure that workers are available to "demonstrate competency" for identified tasks.
- Ensuring that workers adhere to the project/task specific ECP, including PPE and personal hygiene (i.e. including be clean shaven where the respirator seals to the user's face) requirements.
- Coordinating work activities with the Owner/Prime Contractor as required, and/or otherwise implementing the controls necessary to protect others (i.e. erecting of barricades and signage) who could be adversely affected by OlympiaTech

Employees are responsible for:

- Knowing the hazards of silica dust exposure.
- Using the assigned protective equipment in an effective and safe manner.
- Working in accordance with the project/task specific ECP.
- Reporting (immediately) to their supervisor, any hazards (i.e. unsafe conditions, unsafe acts, improperly operating equipment, etc.).

C. EXPOSURE LIMITS

The Occupational Health & Safety Regulation lists an occupational exposure limit or OEL for crystalline silica of 0.025 milligrams per cubic meter (mg/m³).

- This is a concentration to which nearly all workers could be exposed for eight hours a day, five days a week, without adverse health effects.
- However, as a suspected carcinogen, crystalline silica is also an ALARA substance, and exposures must be reduced to levels as low as reasonably achievable below the OEL.

D. RISK IDENTIFICATION

The health hazards of silica come from breathing in the dust. In addition to identifying the specific activities/areas where personnel could be exposed to silica dust, the "amount" of exposure and "duration" of exposure must also be considered.

With consideration to these three factors, activities performed by OlympiaTech employees as well as members of the public and other workers to the dust include, but are not necessarily limited to:

- Surface preparation activities
 - Use of Blow-Packs
 - Use of Bobcats with "sweeper" attachments
 - Use of Sweeper trucks
 - Hand sweeping.
- Jack-hammering
- Saw-cutting
- Drilling

- Granular Surface Preparation activities
- Operation and use of milling equipment or machinery

E. RISK ASSESSMENT

OlympiaTech ' employees use a variety of methods to assist with the assessment of possible and actual silica exposures. These methods will include, but may not necessarily be limited to:

- Reviewing data/reports available in the public domain and industry associations
- Regularly consulting with the Safety Resources/Safety Managers from companies who perform similar work
- Implementing a silica exposure monitoring program. This program will ensure that over time OlympiaTech will have quantifiable silica exposure data available that is representative of all regularly occurring, as well as reasonably foreseeable work activities.
- Exposure monitoring will be conducted in-house, although may be obtained through outside consultants.

F. CONTROL METHODS

When determining measures to reduce or eliminate worker exposure to silica dust, OlympiaTech employees will generally select a combination of controls, listed in order of preference:

- Elimination and Substitution.
- Engineering
- Administrative
- Personnel Protection Equipment (PPE).

G. SUBSTITUTION AND ELIMINATION

Whenever it is possible, employees will substitute products containing silica with products that do not contain silica or contain a lower percentage of crystalline silica.

H. ENGINEERING CONTROLS

Engineering controls are those controls which aim to control or otherwise minimize the release of crystalline silica. Two engineering control options are available to OlympiaTech employees in many circumstances. These include the Local Exhaust Ventilation (LEV) and Wet Dust Suppression (WDS) systems.

- LEV Systems: Tools/appliance specific LEV systems are available on some tools/appliances. Such LEV systems are generally comprised of a shroud assembly, a hose attachment, and a vacuum system. Dust-laden air is collected within the shroud, drawn into the hose attachment, and conveyed to the vacuum, where it is filtered and discharged. "Large scale" LEV systems, such those available on some Vacuum Trucks and Mobile Sweepers, may also be used.

- If LEV systems are used, employees will follow these safe work practices:
 - Vacuum attachment systems that capture and control dust at its source whenever possible.
 - Dust control systems will be maintained in optimal working condition.
 - Grinding wheels will be operated at the manufacturer's recommended RPM operating in excess of this can generate significantly higher airborne dust levels.
 - HEPA or good quality, multi-stage vacuum units that are approved for use with silica dust will be used in accordance with the manufacturer's instructions.
 - Whenever possible, concrete grinding will be completed when the concrete is wet (thus dust release will be significantly reduced)
- WDS Systems: When WDS systems are used employees will follow these safe work practices:
 - If water is not readily available on the specific project, the project supervisor will arrange to have a water tank delivered to the site for use.
 - Pneumatic or fuel such as gasoline powered equipment will generally be used instead of electrically powered equipment if water is the method of dust control, unless the electrical equipment is specifically designed to be used in such circumstances.
 - Pressure and flow rate will be controlled in accordance with the tool manufacturer's specifications.
 - When sawing concrete, tools that provide water directly to the blade will be used if possible.
 - Wet slurry will be cleaned from work surfaces when the work is complete when necessary

I. ADMINISTRATIVE CONTROLS:

Common examples of administrative controls include, but are not limited to:

- Posting of warning signs.
- Rescheduling of work as to avoid the activities of others.
- Relocating unprotected workers away from dusty areas.

When administrative controls are used, OlympiaTech employees will employ the following systems and safe work practices:

- Suitable exposure control will be discussed and determined. As necessary/appropriate, supplemental project and task specific Exposure Control Plans will be developed.
- Suitable housekeeping, restricted work area, hygiene practices, training and supervision procedures/standards will be determined and implemented on projects.
- As appropriate, barriers will be erected around known silica dust generating activities, and/or warning signs will be posted.

- As able, work activities will be scheduled to minimize the silica related effect on, and from, others.

J. PERSONAL PROTECTIVE EQUIPMENT CONTROLS

When used in conjunction with the other controls, personal protective equipment and clothing can help further reduce our employee's exposure to silica dust.

- An air purifying respirator fitted with HEPA cartridges is the most common piece of PPE that would be used by employees to minimize exposure to silica dust.
- Dependent on the effectiveness of the other control measures employed, either a full face piece or 1/2 facepiece respirator would be used by personnel
- Both of these respirators are seal dependent and thus the users must be fit tested and clean shaven where the respirator seals to the face.
- In addition to respiratory PPE, protective clothing may be used and or required to help prevent the contamination of the worker's personnel clothing.

K. EDUCATION AND TRAINING

Prior to performing activities or working on project sites where personnel could be exposed to silica dust. OlympiaTech employees will ensure that personnel receive suitable education and training. As necessary, personnel will be trained to a level in which they can demonstrate competency. Refresher training will be given on an as needed basis. Education and training may include:

- The hazards and risks associated with exposure to silica dust
- The signs and symptoms of silica related diseases.
- General and specific silica exposure reduction methods/strategies
- The use of specific pieces of equipment and control systems
- The use and care of respiratory and other personal protective equipment.
- How to seek first aid
- How to report items of concern relating to silica dust.

The education and training detailed will be delivered to OlympiaTech employees through a variety of forums, including but not necessarily limited to:

- New Employee Orientations.
- Project/Site Orientations.
- Equipment/task specific training
- Start of shift safety talks.
- Notifications and Bulletins

SPILL PREVENTION PROGRAM

A. PURPOSE AND SCOPE

This spill plan is designed for OlympiaTech employees to handle the requirements hazardous substances. The spill plan should be updated if the hazardous substance inventory changes.

B. SPILL PREVENTION

The following are general requirements for any hazardous substances stored or used at this facility. Listed below are the good housekeeping and management practices to prevent spills.

- Ensure all hazardous substances are properly labeled.
- Store, dispense, and/or use hazardous substances in a way that prevents releases.
- Provide secondary containment when storing hazardous substances in bulk quantities (~55 g).
- Maintain good housekeeping practices for all chemical materials at the facility.
- Routine/Daily checks in the hazardous substance storage area are to be performed.
- Monthly inspections of the hazardous substance storage area, secondary containment, and annular space (interior cavity of double wall tank) on any Above-ground Storage Tanks (AST) or Underground Storage Tanks (UST) need to be logged in this plan.
- Facility Specific Requirements

C. SPILL CONTAMINENT

The general spill response procedure at this facility is to stop the source of the spill, contain any spilled material and clean up the spill in a timely manner to prevent accidental injury or other damage.

- Small spills will be contained by site personnel if they are able to do so without risking injury.
- Spill kits are provided and are adequate for anticipated spills. Kits contain appropriate supplies for materials within the facility that may be spilled. These supplies are easily accessible for personnel.
- Personnel will properly characterize spill cleanup materials before disposal.

For questions about disposal call the STGPD program at (253) 798-3589 or the Local Hazardous Waste Program at (253) 798-7672.

D. EMERGENCY RESPONSE

Proper communication measures are in place. Immediately call 911 in the event of injury, fire or potential fire, release of materials, or spill of a hazardous substance that gives rise to an emergency situation. In the event of a large spill, a properly trained employee should:

- Assess the area for any immediate dangers to health or safety (i.e. a wrecked car on fire). If any dangers are present, move away from the area, call 911.

- Notify the primary and/or secondary contact from the list above and then continue your spill response. The primary contact should assess additional notification requirements.
- Retrieve the spill kit from the closest location.
- Assess the size of the leak and any immediate threat of the spill reaching the floor/storm drains or permeable surfaces in the area. If there is an immediate threat and there are no safety concerns, then attempt to block the spill from coming in contact with the floor/storm drain or permeable surface. If no drain covers are available, then try to use absorbent and/or sock booms or rags to stop the spill from getting into the drains or to any permeable surfaces.
- If the spill can be contained with absorbent booms, deploy them around the spill. Use the booms to direct the spill away from any immediate hazards (i.e. a wrecked car).
- If there is no immediate threat to the floor/storm drains or permeable surfaces, or after controlling the spill, try to plug or stop the leak, if possible. If applicable, put on protective gear (gloves, goggles, protective clothing, etc.) and plug the leak.
- Once the spill has been contained and any immediate threat to storm drains or permeable surfaces has been minimized, contact the spill cleanup contractor and dispatch them to clean up the spill or commence spill cleanup procedures.

E. SPILL REPORTING

If a hazardous substance spill exceeds 25 gallons or if any amount has been released to soil, surface water, or storm drains, notify The National Response Center (NRC)(800) 424-8802

F. PLAN MANAGEMENT

The primary contact or designee shall administer this plan and will be responsible for updating and including any required documentation.

G. TRAINING

All personnel who may respond to any spill, need to be trained on the contents and procedures in this plan. Trained personnel will add their names and dates of training to the Training Log. Only persons trained on this plan shall respond to a spill.

H. SPILL TRACKING

Any spills must be entered into the Spill Log. If a large catastrophic spill occurs, attach additional pages to describe the event. Include known or possible causes, areas affected, and effectiveness of the cleanup. Include a review of the cleanup contractor and their procedures. For small spills, it is sufficient to fill out the Spill Log, and to take measures to prevent a repeat occurrence.

- Facility Inspections

Routine inspections will be conducted daily during regular business hours. Daily inspections will include, at a minimum, a visual inspection of the hazardous substances containers and the area immediately adjacent to it for signs of a spill or leak. These inspections do not need to be logged unless a spill or leak is detected. Ideally, these inspections will be conducted by a manager or by regular employees.

- Full site inspections will be conducted monthly by the primary contact or designee. If all items are deemed acceptable; it is sufficient for the inspector to log only the inspection and the results in the Inspection Log.

SUBCONTRACTOR MANAGEMENT PROGRAM

A. PURPOSE AND SCOPE

This program has been developed to ensure that our subcontractors perform all work safely and in accordance with the requirements established by OlympiaTech , OSHA, the general contractor and host employer. Subcontractors used on our projects will be prequalified, assessed while performing work, and required to follow all safety regulations, policies, and procedures established by OlympiaTech , OSHA, the general contractor and host employer.

B. PREQUALIFICATION

- All subcontractors used on OlympiaTech projects will be prequalified to ensure they meet the minimum requirements established by OlympiaTech , the general contractor and host employer.
- The prequalification of subcontractors will be supervised by a qualified OlympiaTech representative or designated third party.
- The prequalification of all subcontractors will be documented. Prequalification documents will be made available upon request to OlympiaTech , OSHA, the general contractor and host employer.
- Subcontractors will be prequalified through a process that includes:
 - A review of OSHA 300 logs over the past four years or from the business start date if less than four.
 - A review of OSHA inspections and citations issued over the past four years or from the business start.
 - A review of all written safety programs, policies and procedures required by OlympiaTech .
 - A review of the procedures established for incident reporting, emergency response.
 - A review of worker's compensation insurance EMR (Experience Modification Rating) information. Proof of insurance documented by a current certificate of insurance from an insurance agency.
 - The documentation of all safety training for supervisors, competent persons, and employees required.
 - The documentation of Operator Qualification (OQ), certifications or licenses required by OlympiaTech , years; date if less than four years; general contractor and host employer for the work to be performed; accident/incident investigation; by OlympiaTech , OSHA, the general contractor, and host employer for the work to be performed; OSHA, the general contractor, and host employers for the work to be performed.

C. JOBSITE ASSESSMENTS

- All subcontractors will be required to perform workplace assessments such as inspections and observations to ensure that all work is performed safely and in

accordance with the requirements established by OlympiaTech , OSHA, the general contractor and host employer.

- Assessments performed by subcontractors will be documented and made available upon request to OlympiaTech , the general contractor and host employer.

Subcontractor Management 1

- Hazards discovered through assessments must be immediately abated. Hazards that cannot be abated by the subcontractor must be immediately reported to OlympiaTech Subcontractors must help to ensure that jobsite personnel are not exposed to hazardous acts or conditions.
- Subcontractors are required to participate in and cooperate with Safety Assessments, Job Hazard Analysis (JHA), Job Safety Analysis (JSA) and Job Safety Observations (JSO) as performed by OlympiaTech , the general contractor and host employer.

D. ACCIDENT INVESTIGATION AND REPORTS

- Subcontractors must immediately report all OSHA recordable accidents to OlympiaTech they must also comply with the reporting/recording requirements established by OSHA, the general contractor and host employer.
- In the case of a fatality or hospitalization of three or more employees, subcontractors will notify the local OSHA Office or contact 1-800-321-OSHA to report the accident within 8 hours of receiving notice.
- Subcontractors must immediately take appropriate corrective action to ensure the prevention of recurring accidents.
- Subcontractors must conduct a comprehensive investigation of all OSHA recordable accidents and ensure that additional corrective action, if required, is taken. All accident investigations must be documented and provided upon request to OlympiaTech , the general contractor, and host employer.

E. COMMUNICATION AND TRAINING

- Subcontractors will attend and participate in all meetings, orientations, training, initiatives, and activities required by OlympiaTech , the general contractor and host employer in preparation for working safely at the project location.
- Subcontractors will ensure the following training is provided:
- Subcontractors are required to track and document safety training. The documentation must include:
 - Safety Orientation Training
 - New and newly assigned workers will participate in a safety orientation training session.
- Participants will be instructed in all elements of OlympiaTech safety program and will complete all required safety training.
- Required Training

- Subcontractors will be included in tailgate safety meetings, job safety analysis or hazard assessments, and on the job safety inspections.
- Subcontractors will be included in pre-job meetings or kick-off meetings, and safety orientations.
- No employee will be allowed to perform a job or task unless they have received training on the hazards present and the precautions necessary to perform the job safely. Subcontractors will ensure the all training required by OlympiaTech , OSHA, the general contractor and host employer has been completed.
- Refresher Training
 - Subcontractors will ensure that on-going refresher training is provided as needed or as required by OlympiaTech , OSHA, the general contractor or host employer.
- Site Specific Training
 - Before beginning a new job, a review of the hazards will be performed. Training will be provided for any new hazards introduced to the workers. This may include the introduction of new substances, equipment, tools, processes, procedures or jobsite/environmental hazards. an outline of training required by the organization, the training provided to a specific worker, and a current training agenda. Training documents must be provided to OlympiaTech , the general contractor and host employer upon request.

Subcontractor Management 2

- Job Briefings are required before each job. They must be conducted by the person in charge and documented. Job Briefings must address the hazards associated with the work, procedures to be used, any special precautions, control of energy sources, and personal protective equipment (PPE) required. The documentation of Job Briefings must be made available upon request to OlympiaTech , the general contractor and host employer.

F. MULTI-EMPLOYER WORKSITE POLICY

Subcontractors will ensure that all safety procedures are reviewed with OlympiaTech , the general contractor, host employer an affected contractors before a job begins. Specific written policies and procedures will be shared. This review will include materials safety data sheets, emergency action plans, and the interpretation of signs and tags. All relevant information will be communicated to supervisors and workers.

G. POST PROJECT PERFORMANCE REVIEW

Upon conclusion of a project, OlympiaTech will conduct a post-job safety performance review. This information will be used in evaluating the subcontractor's suitability for future projects. The results of the post project performance review will be made available to our subcontractors, the general contractor, and host employer upon request.

TRENCHING, SHORING AND EXCAVATION

A. PURPOSE AND SCOPE

The goal of the Trenching, Shoring and Excavation program is to protect all OlympiaTech employees exposed to excavation or trenching operations. This can be accomplished through pre-planning and careful implementation of all applicable state and federal safety standards. This written program works to create and maintain a safe work environment as required by 29CFR 1926 Subpart P.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Prepare a safety checklist prior to the start of digging.
- Check the proximity of utilities, buildings and vibration sources.
- Contact the owners of affected utilities prior to digging and arrange for shutdown or relocation of facilities, if necessary.
- Provide daily jobsite excavation permission.
- Check the adequacy and availability of all equipment including PPE, shoring materials, signs, barricades and machinery.
- Ensure OlympiaTech employees are trained to recognize hazards associated with a trench or excavation.

Supervisors

Supervisors will:

- Ensure proper placement of equipment and materials storage.
- Determine the layout of the jobsite.
- Establish a vehicle traffic control plan and ensure installation of traffic zone safeguards.
- Ensure that the trench or excavation is safe for employee occupation.

Employees

Employees will:

- Prepare a safety checklist prior to the start of digging.
- Check the proximity of utilities, buildings and vibration sources.
- Contact the owners of affected utilities prior to digging and arrange for shutdown or relocation of facilities, if necessary.
- Provide daily jobsite excavation permission.
- Check the adequacy and availability of all equipment including PPE, shoring materials, signs, barricades and machinery.

- Ensure OlympiaTech employees are trained to recognize hazards associated with a trench or excavation.

C. ACTION DETAILS

- A copy of 29 CFR 1926 - Subpart "P" will be made available on the jobsite. A competent person with a comprehensive knowledge of OSHA's Excavation Standards and the safe practices necessary to ensure employee safety will remain on site while work is being performed in trenches or excavations.
- A pre-job site review will be conducted to develop a job plan that ensures a safe, efficient job process and evaluate difficult sloping and shoring problems (i.e. manholes, etc) prior to commencing the work.
- All trenches will be properly classified, sloped, or shored in accordance with the appendices of 29 CFR 1926 - Subpart "P", or in accordance with manufacturer's tabulated data (i.e. Excavations 5 feet (1.52 m) or greater in depth or any depth where a competent person determines that there is a potential for cave-in. The competent person will consult with a Registered Professional Engineer (RPE) for trenches over 20'.
- Inspections of equipment and trench conditions will be performed by the competent person at the start of each shift or as needed by changing conditions.
- Sufficient means for exiting excavations 4 feet deep or more shall be provided and are within 25 feet of lateral travel for OlympiaTech employees.
- Soil conditions will be determined by visual and manual tests to determine stability of soil and surrounding trench conditions.

NOTE: If visual and manual tests are not performed, soils shall be classified as type "C".

- Ramps and walkways will be provided for employee use in accordance with OSHA standards.
- OlympiaTech employees will not be permitted to work in excavations where water has accumulated or is accumulating unless adequate precautions have been taken. Diversion ditches, dikes, or other means shall be used to prevent surface water from entering an excavation and to provide drainage to the adjacent area.
- Tests will be performed for the presence of oxygen and air quality in excavations as needed. The competent persons on site will be qualified in identifying confine/ hazardous spaces due to the presence of flammable/ combustible gases, toxics, oxygen deficiency and oxy- gen enriched environments.
- While the excavation is open, underground installations shall be protected, supported or removed as necessary to safeguard OlympiaTech employees. Adjacent structures shall be supported to prevent possible collapse.
- OlympiaTech employees will not be permitted under loads that are handled by lifting or digging equipment. OlympiaTech employees will not be allowed to work near the excavation above other OlympiaTech employees unless the lower level OlympiaTech employees are adequately protected.
- Records for the protection systems used will be maintained on site.

- Appropriate emergency rescue equipment will be available to meet existing or potential conditions.

D. SLOPING

- Where sloping is used to protect OlympiaTech employees from cave-ins the angle of incline shall be determined using the following; soil type, environmental conditions of exposure and application of surcharge loads. Where soil type is the predominant factor the following angles will be observed.
- Soil or Rock Type Maximum Allowable Slopes (H:V) For Excavations Less Than 20 Feet Deep Stable Rock Vertical (90°)
 - Type A $3/4:1$ (53°)
 - Type B 1:1 (45°)
 - Type C $1\frac{1}{2}:1$ (34°)

E. SOIL CLASSIFICATIONS

The following describes the types of soils our company may work in.

Type A

- Cohesive soils with an unconfined, compressive strength of 1.5 ton per square foot (tsf) (144 kPa) or greater.
- Examples of cohesive soils are: clay, silty clay, sandy clay, clay loam and, in some cases, silty clay loam and sandy clay loam. Cemented soils such as caliche and hardpan are also considered Type A.
- However, no soil is Type A if:
 - The soil is fissured
 - The soil is subject to vibration from heavy traffic, pile driving, or similar effects
 - The soil has been previously disturbed
 - The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater
 - The material is subject to other factors that would require it to be classified as a less stable material.

Type B

- Cohesive soil with an unconfined compressive strength greater than 0.5 tsf (48 kPa) but less than 1.5 tsf (144 kPa).
- Granular cohesion less soils including: angular gravel (similar to crushed rock), silt, silt loam, sandy loam and in some cases, silty clay loam and sandy clay loam.
- Previously disturbed soils except those which would otherwise be classed as Type C soil.
- Soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration; or Dry rock that is not stable OR material

that is part of a sloped, layered system where the layers dip into the excavation on a slope less steep than four horizontal to one vertical (4H: 1V), but only if the material would otherwise be classified as Type B.

Type C

- Cohesive soil with an unconfined compressive strength of 0.5 tsf (48 kPa) or less; or Granular soils including gravel, sand, and loamy sand or submerged soil or soil from which water is freely seeping or submerged rock that is not stable
- Material in a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H: 1V) or steeper

F. EMERGENCY RESPONSE

- In the event an employee becomes entrapped in a cave in, rescuers must proceed with caution. The following procedures shall be followed:
- A protective system must be in place before rescuers are allowed to enter the excavation.
- Call 911 and the Safety Director.
- Request a police escort for rescue equipment (i.e. shoring equipment, etc).
- Only dig by hand or use hand digging tools in the area the victim is believed to be located.
- When rescue equipment arrives on scene, employ a protective system or vacuum the soil around the victim as much as feasibly possible.
- Continually analyze, and implement new tactics that best rescue the victim.
- Allow higher trained emergency response personnel to complete tasks as needed.

G. TRAINING

- Employee training will include, but is not limited to, the following:
 - Recognition of hazards that could affect the safety of a trench or excavation.
 - Correct methods of access and egress of a trench or excavation.
 - The appropriate forms of PPE necessary while working in and around a trench or excavation.
 - The correct placement of materials and excavation materials to the edge of the trench or excavation.
 - The correct protective system to be used and its correct installation.

VEHICLE SAFETY POLICY PROGRAM

A. PURPOSE AND SCOPE

The goal of this program is to ensure that OlympiaTech operations involving the use of vehicles are conducted such that accidents which may injure people or cause damage to property and/or the environment will be avoided. The motor vehicle procedures identified address the requirements as identified in 29 CFR 1926.601 Motor Vehicles and Section 5(a)1, General Duty Clause of the OSH Act of 1970 and the DOT Federal Motor Carrier Safety Regulations Parts 40,325, 355-379, 381-399.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Ensure that all company vehicles are safe, in good working order and inspected according to any federal and/or state regulations
- Ensure that all employees whose job includes operation of a motor vehicle are trained in the recognition of hazards associated with the motor vehicle and safe operation of the motor vehicle.

Employees

Employees will:

- Whose job includes operating a motor vehicle, will participate in training to recognize hazards associated with motor vehicle operations.
- Will sign and abide by the Vehicle Safety Policy which includes the mandatory use of a seat belt/ safety harness while operating or riding in a motor vehicle.
- Whose job includes operating a motor vehicle, will perform a pre-trip and post-trip inspection of company vehicles.

C. VEHICLE SAFETY ACTIONS

All employees operating company vehicles or operating personal vehicles on company business are subject to the following:

- Authorized to operate only the vehicle assigned to them by their supervisor. Vehicles should be used only for conducting the necessary company business as assigned. Supervisors must approve all tasks requiring the use of company vehicles before they are performed.
- In possession of a valid driver's license and the correct license endorsements needed for the vehicle assigned. The supervisor must be notified when there are changes to license status. No vehicles may be operated without a proper license.
- No one may operate a vehicle unless training has been received in the inspection, operation and maintenance of the vehicle assigned.
- Inspection of assigned vehicles will be done before and after each trip following the established company procedure. A vehicle may never be used that does not pass.

Inspection results will be documented on the appropriate form and provided to the supervisor.

- All necessary documentation (driver's license, owner card, insurance card, medical card, log books, manifests, etc. as required.) shall be in the vehicle before it is used.
- Seat belts and shoulder harnesses, if installed, must be worn by drivers and passengers at all times. Vehicle may not be operated unless all are wearing safety belts and shoulder harnesses.
- No one other than the individual assigned to a vehicle may operate it. Nor are any passengers other than those authorized by a supervisor allowed in the vehicle.
- Supervisors will be notified immediately of any legal citations received while operating a vehicle on or off the job.
- All accidents will be reported following established company procedures.
- OlympiaTech Substance Abuse policy must be observed at all times. Vehicle will not be used while under the influence of alcohol, illegal drugs or hazardous prescription medication. Employees will not ride with anyone under the influence of alcohol, illegal drugs or hazardous prescription medication.
- All traffic laws will be obeyed and vehicles operated in a safe and courteous manner at all times.
- If personal vehicles are used on company business employees shall ensure that their vehicles meet all standards established for company vehicles.

D. TRAINING

All OlympiaTech employees that will use company vehicles will receive training conducted by a qualified person. The training program will cover, at a minimum, the following elements:

- Pre-trip and post-trip inspections on all vehicles they are assigned to operate
- Hazards of driving while impaired
- Use of protective equipment, emergency equipment and vehicle safety systems
- Hazards associated with vehicle operation and the action to take in the event of an emergency
- Checking the weight of vehicles to prevent over- loading
- Distributing and securing loads properly
- Special training for drivers who haul hazardous substances
- Establish a plan to monitor the vehicle safety program

WELDING AND HOT WORK PROGRAM

A. PURPOSE AND SCOPE

OlympiaTech has developed this Welding and Hot Work Program to ensure that all employees receive adequate information relevant to the possible hazards that may be involved with welding and hot work. For the purposes of this program, “Hot Work” is defined as welding, cutting, soldering, brazing, grinding, and other forms of torch operations that will introduce sparks or open flame to a work area. Potential safety and health hazards can result from the gases and vapors, dusts and fumes, sparks, hot metal, and radiant energy produced during hot work operations.

This Hot Work Program is intended to:

- Preserve the safety and health of Company workers performing work near hot work operations
- Ensure the safety of all occupants that may be present during hot work operations
- Limit losses from accidental ignition of materials in the vicinity of hot work operations
- Prevent accidental activation of the premise fire detection system, if present.

The following program outlines how this objective will be accomplished. This policy covers all potential work- place exposures involving hot work as defined by federal (29 CFR 1910.252 – Welding, Cutting, and Brazing and 1926.352 – Fire Prevention), state and local regulations, and NFPA 51B – Fire Prevention in Use of Cutting and Welding Processes.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Monitor this Welding and Hot Work Program.
- Coordinate any hot work activities performed by or near OlympiaTech employees with the Host Employer. Hot work performed by others has the potential to affect OlympiaTech employees.
- Review requests submitted by supervisors for hot work and issue a Hot Work Permit where needed.

Supervisors

The Supervisors will:

- Identify jobs where hot work will be performed and ensure a hot work permit is secured for the job.
- Consult with the host employer and review the jobsite for hazards associated with hot work. Provide this information to the Safety Director.
- Control hazards as directed on the permit provided by the Safety Director.\

Employees

The Employees will:

- Follow all safety and health procedures described in this program
- Consult Safety Data Sheets (SDSs), as needed, for additional safety and health precautions associated with hazardous materials used in hot work.
- Report all safety and health issues associated with hot work operations at the jobsite. All questions should be referred to the Safety Director or Supervisor.
- Be aware that if the object to be welded or cut cannot readily be moved, all movable fire hazards should be removed.

C. HAZARD DETERMINATION

OlympiaTech does not intend to evaluate any of the hazardous substances associated with hot work activities, but has chosen to rely upon the evaluation performed by the suppliers or by the manufacturers of the substances to begin to identify specific hazards associated with any particular type of hot work. OlympiaTech will also rely on any hazard assessment information that can be provided by the Host Employer.

- If all fire hazards cannot be removed, then guards shall be used to confine the heat, sparks and slag and to protect the immovable fire hazards.
- If welding/cutting cannot be safely, it shall not be performed?

Non-permissible Areas

Hot work shall not be allowed in the following areas:

- In areas not authorized by management
- In sprinklered buildings while such protection is impaired.
- In the presence of explosive atmospheres (that is, where mixtures of flammable gases, vapors, liquids, or dusts with air exist)
- In explosive atmospheres that can develop inside unclean or improperly prepared drums, tanks, or other containers and equipment that have previously contained such materials.
- In explosive atmospheres that can develop in areas with an accumulation of combustible dusts.
- In areas where hazardous fumes, gases, or dust is possible.

D. FIRE WATCH

- A fire watch shall be required when hot work is performed in a location where other than a minor fire might develop, or where the following conditions exist:
- Combustible materials in building construction or contents are closer than 35 ft (11 m) to the point of operation.
- Combustible materials are more than 35 ft (11m) away but are easily ignited by sparks.
- Wall or floor openings within a 35 ft (11m) radius expose combustible materials in adjacent areas, including concealed spaces in walls or floors.

- Combustible materials are adjacent to the opposite side of partitions, walls, ceilings, or roofs and are likely to be ignited.
- A fire watch shall be maintained for at least ½ hour after completion of hot work operations in order to detect and extinguish smoldering fires. More than one fire watch shall be required if combustible materials that could be ignited by the hot work operation cannot be directly observed by the initial fire watch.

E. HOT WORK PERMIT AREAS

Hot work areas will be inspected before hot work begins and/or during hot work activities. The fire alarm systems or devices may be disabled as directed by the Host Employer. Restrictions on duration of any hot work are usually at the discretion of the Host Employer. Most hot work permits are:

- Specific to a hot work activity
- In the designated area
- For the designated time frame.

Where hot work activities are to be performed, the Safety Director or his/her designee will meet with the Host Employer to discuss any additional precautions that may have to be implemented to protect the safety and health of OlympiaTech employees who may be working in the vicinity of the hot work activities. This could include using barrier tape to designate the area(s)

Wear special clothing or personal protective equipment is required to work within the designated area. If it is decided that special precautions are necessary to protect OlympiaTech employees, the affected employees will be notified and given an opportunity to discuss their concerns during the job briefing.

Hot Work Operator

- The hot work operator shall handle the equipment safely and use it as follows so as not to endanger lives and property.
- The operator shall have approval before starting hot work operations.
- The operator shall cease hot work operations if unsafe conditions develop and shall notify management for reassessment of the situation.

F. TRAINING

All OlympiaTech employees working in the vicinity of hot work activities will be informed of the:

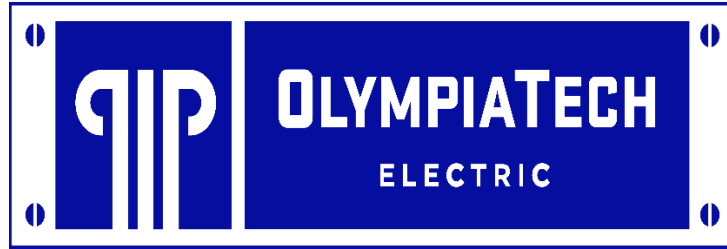
- Health and safety hazards of an employee associated with the type of hot work that may occur
- Proper selection of protective clothing and personal protective equipment that may be required to work in the vicinity of hot work activities
- Elements of this Hot Work Guidance Program
- The ability to identify the causes of workplace fires

- The procedures for workplace inspections to eliminate or control fire hazards
- Identify and describe the three classes of fires and the fire extinguishers that should be selected to fight each class.
- Describe actions that should be taken when responding to a fire victim.
- Demonstrate competence in the use of a portable fire extinguisher and fight a fire.
- All persons performing hot work such as welding or cutting should be trained in:
- Proper equipment operation, handling and storage of welding materials, compressed gas safety, chemical hazards, and in working procedures, including the written hot work permit.
- Additional training may also be necessary in the proper selection and use of personal protective equipment. Training in confined space entry is necessary before working in such areas.

G. FIRE EXTINGUISHER SYSTEMS

General Rules

- Only fire extinguishers meeting recognized standards and approved by a nationally recognized testing laboratory should be used.
- The correct type of fire extinguisher should be provided for which type of class of fire that may occur
- The extinguisher should be a sufficient size.
- Fire extinguishers should be mounted where they will be readily accessible for immediate use.
- Fire extinguishers should be regularly inspected and properly maintained
- Employees should know the location of the extinguisher and fire alarm boxed in their areas
- Employees will be trained in the steps to take during an emergency.



Electrical Safety Data Sheets SDS

Product Name: nVent ERICO Cadweld

Supersedes Date: 2019-05-31

SDS-ID: Cadweld_OSHA

Page 1 of 13

Revision Date: 2019-12-17

Version Number: Draft 2

SECTION 1: IDENTIFICATION

1.1. Product identifier

Product identifier name: nVent ERICO Cadweld

Other means of identification: Inclusive of material types-

Starting Material

Welding Material - F20 (includes prefixes ACB, ACC and SCC), F80 (includes prefixes SB, PB, ACB, ACC and SCC), F33 (includes prefix CA), XF19 (includes prefix XF), F76

1.2. Recommended use of the chemical and restrictions on use

Application: Exothermic welding material

Restrictions: None specified

1.3. Details of the supplier of the safety data sheet

Manufacturer: nVent
ERICO International Corporation
34600 Solon Road
Solon, Ohio 44139
Tel: (440) 248-0100

Further information can be obtained from: jacob.williams@nvent.com

1.4. Emergency telephone number

Emergency telephone: ChemTel
1-800-255-3924 USA and Canada
+01-813-248-0585 International

SECTION 2: Hazards Identification

2.1. Classification of the chemical

The inner packaging contains two distinct, separate layers of chemicals. The smaller layer is Starting Material used as an ignition component for the larger layer of Welding Material. Both chemicals are hazardous per OSHA.

Product Name: nVent ERICO Cadweld

Supersedes Date: 2019-05-31

SDS-ID: Cadweld_OSHA

Page 2 of 13

Revision Date: 2019-12-17

Version Number: Draft 2

OSHA:

Starting Material -

Flammable Solid Category 1

Eye Damage Category 1

Combustible Dust

Welding Material -

Eye Damage Category 1

Acute Toxicity – Oral Category 4

Acute Toxicity – Inhalation Category 4

Combustible Dust

Label elements (combined for Starting Material and Welding Material)



Pictograms:

Signal word: Danger

Hazard statements:

Flammable solid

Causes serious eye damage

Harmful if swallowed

Harmful if inhaled

May form combustible dust concentrations in air

Product Name: nVent ERICO Cadweld

Supersedes Date: 2019-05-31

SDS-ID: Cadweld_OSHA

Page 3 of 13

Revision Date: 2019-12-17

Version Number: Draft 2

Precautionary statements:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Ground and bond container and receiving equipment.

Use explosion-proof electrical, ventilating, lighting, and other equipment.

Avoid breathing dust or fume.

Wash hands and skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Wear protective gloves, protective clothing, eye protection and face protection.

If swallowed: Call a poison center or doctor if you feel unwell.

If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing. Immediately call a poison center, doctor, or seek medical attention if molten product contacts eyes or if eye irritation persists after exposure to dust.

Rinse mouth.

In case of fire: Use dry sand or large amounts of water to extinguish.

Dispose of contents and container in accordance with local, state, national, and international regulations.

2.2. Other hazards

Other:

Improper use of the product or inadequate preparation of the conductors, molds or surroundings can result in aggressive reactions. Self-propagating high temperature reaction will occur if heated above ignition temperature. Generates molten metal in excess of 2498°F (Starting Material), slag and dense, dusty smoke. The molten product can cause serious burns. Inhalation of powder or fumes may cause metal fume fever. Exposure to reaction by-products: See section 8.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Mixtures

Only classified substances above threshold limits are shown.

Starting Material (smaller layer)

<u>%</u>	<u>CAS-No.</u>	<u>Chemical Name</u>
30-40	7429-90-5	Aluminum powder (stabilized)
1-25	1317-38-0	Cupric oxide
1-25	1317-39-1	Cuprous oxide

Welding Material (larger layer)

Product Name: nVent ERICO Cadweld

Supersedes Date: 2019-05-31

SDS-ID: Cadweld_OSHA

Page 4 of 13

Revision Date: 2019-12-17

Version Number: Draft 2

<u>%</u>	<u>CAS-No.</u>	<u>Chemical Name</u>
25-75	1317-39-1	Cuprous oxide
1-20	1317-38-0	Cupric oxide
1-15	7440-50-8	Copper
1-15	7429-90-5	Aluminum powder (stabilized)

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Molten product will cause skin burns and if in contact with eyes while in a molten state may cause serious damage.

<u>Inhalation:</u>	Inhalation of welding fumes/dust inhalation: Move into fresh air and keep at rest. In case of persistent throat irritation or coughing: Seek medical attention and bring these instructions.
<u>Skin contact:</u>	Remove contaminated clothes and rinse skin thoroughly with water. If material is hot, treat for thermal burns and get immediate medical attention.
<u>Eye contact:</u>	Dust in the eyes: Do not rub eye. Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids widely. If irritation persists: Seek medical attention and bring these instructions.
<u>Ingestion:</u>	Immediately rinse mouth and drink plenty of water. Keep person under observation. If person becomes uncomfortable seek hospital and bring these instructions.

4.2. Most important symptoms and effects, both acute and delayed

<u>Symptoms/effects:</u>	Chronic inhalation of powder or fumes without proper ventilation or protection may cause symptoms similar to metal fume fever. See section 11 for more detailed information on health effects and symptoms.

4.3. Indication of any immediate medical attention and special treatment needed

<u>Medical attention/treatments:</u>	Burns (in contact with molten metal, slag or hot equipment): Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

<u>Extinguishing media:</u>	Extinguish with dry sand and/or flood with large amounts of water.
	Extinguishing media which are not suitable: Hand water buckets or hand storage pumps. Molten metal contact with water can cause small pockets of superheated steam.
	Use fire-extinguishing media appropriate for surrounding materials.

5.2. Special hazards arising from the substance or mixture

<u>Specific hazards:</u>	During fire, gases hazardous to health may be formed. Ignition temperature: >849° F (Starting Material); >1742°F (Welding Material)

Product Name: nVent ERICO Cadweld

Supersedes Date: 2019-05-31

SDS-ID: Cadweld_OSHA

Page 5 of 13

Revision Date: 2019-12-17

Version Number: Draft 2

Ignition of large quantities of exothermic materials may result in large volumes of dense smoke.

5.3. Advice for firefighters

Protective equipment for firefighters: Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Avoid inhalation of dust. Do not breathe fumes. Avoid contact with skin and eyes. Follow precautions for safe handling described in this safety data sheet.

Remove sources of ignition. Ventilate well.

6.2. Environmental precautions

Environmental precautions: Precaution should be taken to prevent hot material and reaction byproducts from contact with combustible materials in surrounding areas. Avoid spreading dust or contaminated materials. Avoid discharge to the aquatic environment. Contact local authorities in case of spillage to drain/aquatic environment.

6.3. Methods and material for containment and cleaning up

Spill cleanup methods: Remove sources of ignition. Sweep up spilled substance and remove to safe place. For large spills use natural fiber brush or broom with a conductive, non-sparking pan.

Product Name: nVent ERICO Cadweld

Supersedes Date: 2019-05-31

SDS-ID: Cadweld_OSHA

Page 6 of 13

Revision Date: 2019-12-17

Version Number: Draft 2

6.4. Reference to other sections

Reference: For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Safe handling advice: Avoid inhalation of dust. Do not breathe fumes. Avoid contact with skin and eyes. Observe good chemical hygiene practices. nVent ERICO Cadweld Starting, Welding and Filler Materials are designed for use in nVent ERICO Cadweld equipment only. Use of improper or damaged equipment can lead to exposure to molten metal and reaction byproducts.

Technical measures: Do not smoke or use open fire or other sources of ignition. Work practice should minimize risk of contact. All product instructions should be followed to ensure proper welding and safety.

Technical precautions: Confined space: Local exhaust is recommended.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures for safe storage: nVent ERICO Cadweld Starting, Welding and Filler Materials should be stored in a clean, dry and secure location. Storage should include provisions to minimize rough handling, excessive vibration and physical abuse. All outer packages must be stored in accordance with label markings.

Storage conditions: If evidence is present of damaged or contaminated products, these units should not be used.

If proper storage is maintained, nVent ERICO Cadweld Materials do not exhibit any storage or shelf life.

7.3. Specific end use(s)

Specific use(s): Welding material with ignition component included

Product Name: nVent ERICO Cadweld

Supersedes Date: 2019-05-31

SDS-ID: Cadweld_OSHA

Page 7 of 13

Revision Date: 2019-12-17

Version Number: Draft 2

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

A detailed fume analysis was conducted on nVent ERICO Cadweld Starting and Welding Materials. Reaction byproducts were tested for total dust, respirable dust, metals, acids, fluorides, and various elements identified in typical welding fume analysis. All sampling and analysis followed methodologies dictated by the National Institute of Occupational Safety and Health (NIOSH) and by the U.S. Occupational Safety and Health Administration (OSHA). A certified Industrial Hygienist did the sample collection and independent labs conducted all analytical work.

Data collected was evaluated and compared to limits set by the American Conference of Governmental Industrial Hygienists (ACGIH) and OSHA.

Starting Material: No threshold limits are attainable with use of this product as intended.

Occupational exposure limits:

CAS-No.:	Chemical name:	As:	Exposure limits:	Type:	Notes:	References:
7429-90-5	Aluminum, metal, respirable fraction	Al	5 mg/m3	TWA	-	OSHA
7429-90-5	Aluminum, metal, total dust	Al	15 mg/m3	TWA	-	OSHA
7429-90-5	Aluminum metal, respirable fraction	-	1 mg/m3	TWA	A4	ACGIH
7440-50-8	Copper, dusts and mists	Cu	1 mg/m3	TWA	-	OSHA
7440-50-8	Copper dusts and mists	Cu	1 mg/m3	TWA	-	ACGIH
7440-50-8	Copper, fume	-	0.2 mg/m3	TWA	-	ACGIH
7440-50-8	Copper, fume	Cu	0.1 mg/m3	TWA	-	OSHA
1309-37-1	Iron oxide fume	-	10 mg/m3	TWA	-	OSHA
-	Iron oxide (Fe2O3), respirable fraction	-	5 mg/m3	TWA	A4	ACGIH

Notes: A4: Not classifiable as a Human Carcinogen

SAFETY DATA SHEET

Product Name: nVent ERICO Cadweld

Supersedes Date: 2019-05-31

SDS-ID: Cadweld_OSHA

Page 8 of 13

Revision Date: 2019-12-17

Version Number: Draft 2

Welding Material: As a worst-case scenario, calculations were completed based on a sealed 800 cubic foot room with no ventilation. These calculations indicate that the copper fume PEL would be the limiting factor. Under normal outdoor use or in ventilated areas threshold limits are beyond any expected exposure limits.

Occupational exposure limits:

CAS-No.:	Chemical name:	As:	Exposure limits:	Type:	Notes:	References:
7429-90-5	Aluminum metal, respirable fraction	Al	5 mg/m3	TWA	-	OSHA
7429-90-5	Aluminum metal, total dust	Al	15 mg/m3	TWA	-	OSHA
7429-90-5	Aluminum metal, respirable fraction	-	1 mg/m3	TWA	A4	ACGIH
7440-21-3	Silicon, respirable fraction	-	5 mg/m3	TWA	-	OSHA
7440-21-3	Silicon, total dust	-	15 mg/m3	TWA	-	OSHA
7440-50-8	Copper, dusts and mists	Cu	1 mg/m3	TWA	-	OSHA
7440-50-8	Copper, dusts and mists	Cu	1 mg/m3	TWA	-	ACGIH
7440-50-8	Copper, fume	Cu	0.1 mg/m3	TWA	-	OSHA
7440-50-8	Copper, fume	-	0.2 mg/m3	TWA	-	ACGIH
	Fluoride	F	2.5 mg/m3	TWA		OSHA
	Fluoride	F	2.5 mg/m3	TWA	A4; BEI	ACGIH

Notes: A4 – Not classifiable as a Human Carcinogen; BEI – Biological Exposure Indices

8.2. Exposure controls

Engineering measures:

Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of dust and fumes.

Personal protection:

Personal protection equipment should be chosen according to the relevant standards and in discussion with the supplier of the personal protective equipment.

Respiratory equipment:

Normal use precludes use of special protection as material is generally used out of doors, in small quantities and is of short duration. In case of inadequate ventilation and work of long duration or on large surface areas in confined rooms, wear suitable respiratory equipment for dusts and metal fumes.

Hand protection:

Heat insulated protective gloves. Recommended for handling hot equipment.

Eye protection:

Wear safety glasses. Avoid looking directly at the light generated by the reaction, unless specialized welding eye protection is used.

Skin protection:

Use protective clothing, which covers arms and legs.

Hygiene measures:

Wash hands after handling. Change contaminated clothing.

Product Name: nVent ERICO Cadweld

Supersedes Date: 2019-05-31

SDS-ID: Cadweld_OSHA

Page 9 of 13

Revision Date: 2019-12-17

Version Number: Draft 2

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

	Starting Material (smaller layer)	Welding Material (larger layer)
Form:	Powder	Granular
Color:	Gray-black	Gray-black
Odor:	Odorless	Odorless
pH:	Not available	Not available
Melting point/freezing point:	1112°F	1999°F
Boiling point:	Not relevant	Not relevant
Flash point:	Not relevant	Not relevant
Evaporation rate:	Not relevant	Not relevant
Flammability:	Flammable	Not flammable
Upper/lower flammability or explosive limits:	Not known	Not known
Vapor pressure:	Not relevant	Not relevant
Vapor density:	Not relevant	Not relevant
Relative density/specific gravity (water=1):	4.0	5.5
Solubility:	Insoluble in water	Insoluble in water
Partition coefficient (n-octanol/water):	Not available	Not available
Auto-ignition temperature:	>849°F	>1742°F
Decomposition temperature:	Not available	Not available
Viscosity:	Not relevant	Not relevant
Oxidizing properties:	Not available	Not available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity: See hazardous reactions.

10.2. Chemical stability

Stability: Stable. Not sensitive to vibrations, shock or impact and is not subject to spontaneous ignition.

Product Name: nVent ERICO Cadweld

Supersedes Date: 2019-05-31

SDS-ID: Cadweld_OSHA

Page 10 of 13

Revision Date: 2019-12-17

Version Number: Draft 2

10.3. Possibility of hazardous reactions

Hazardous reactions: Aggressive reactions are possible if excess moisture, grease, or other combustible substances are present in the mold, on the connector, or on the conductors to be welded. Care should be taken to ensure proper preparation in accordance with instruction prints.

10.4. Conditions to avoid

Conditions/materials to avoid: Temperatures above ignition point. >849°F (Starting Material)

10.5. Incompatible materials

Incompatible materials: Typical of problems associated with molten metals.

10.6. Hazardous decomposition products

Hazardous decomposition products: None under normal conditions. Polymerization will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity (oral): Harmful if swallowed, based on Cuprous oxide component.

Acute toxicity (dermal): Based on available data, the classification criteria are not met.

Acute toxicity (inhalation): Harmful if inhaled, based on Cuprous oxide component.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Eye damage/irritation: Causes serious eye damage from Cuprous oxide component.

Respiratory sensitization: Based on available data, the classification criteria are not met.

Skin sensitization: Based on available data, the classification criteria are not met.

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met. Components are not listed as carcinogens by the NTP, IARC, or OSHA at 29 CFR 1910 Subpart Z.

Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT - Single exposure: Based on available data, the classification criteria are not met.

STOT - Repeated exposure: Based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

Inhalation: Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain.

Skin contact: Dust may have an irritating effect on moist skin. Prolonged and/or repeated contact: May cause eczema-like skin disorders (dermatitis). The molten product can cause serious burns.

Product Name: nVent ERICO Cadweld

Supersedes Date: 2019-05-31

SDS-ID: Cadweld_OSHA

Page 11 of 13

Revision Date: 2019-12-17

Version Number: Draft 2

Eye contact: Particles/fumes in the eyes may cause discomfort/irritation.

Ingestion: Ingestion may cause nausea, headache, dizziness and intoxication.

Specific effects: Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases. Copper oxides may by repeated or prolonged inhalation occasionally cause ulceration and perforation of the nasal septum. Long term exposure to copper containing dusts may cause allergic dermatitis.

Toxicological data: LD₅₀ (oral, rat): 1340 mg/kg (Cuprous oxide)

No LC₅₀ data available. Cuprous oxide is noted as Acute Toxicity – Inhalation Category 4 for Welding Material per ECHA harmonized classification scheme.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity: Very toxic to aquatic organisms with long-term adverse effects in the aquatic environment.
M-factor (acute)
Cuprous oxide: 100
Cupric oxide: 100

12.2. Persistence and degradability

Degradability: The product solely consists of inorganic compounds which are not biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential: No data available on bioaccumulation.

12.4. Mobility in soil

Mobility: The product is not volatile but may be spread by dust-raising handling.

12.5. Results of PBT and vPvB assessment

PBT/vPvB: This product does not contain any PBT or vPvB substances.

12.6. Other adverse effects

Other adverse effects: None known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Dispose of waste and residues in accordance with applicable authority requirements.

SECTION 14: TRANSPORT INFORMATION

The product is a hazardous material/dangerous good per US and international transportation regulations. As prepared by nVent, with minimal quantities present per inner and outer packaging, excepted/small quantity and marine pollutant exceptions apply for ground, air, and vessel transport.

14.1. DOT Classification for Domestic (U.S. Only) Ground, Air, and Vessel

Identification number: UN3089

Product Name: nVent ERICO Cadweld

Supersedes Date: 2019-05-31

SDS-ID: Cadweld_OSHA

Page 12 of 13

Revision Date: 2019-12-17

Version Number: Draft 2

Proper shipping name: METAL POWDER, FLAMMABLE, N.O.S.

Class: 4.1

Packing group: II

Environmentally hazardous to the aquatic environment/marine pollutant: No

Notes: Starting Material limited to 30 g per inner package with outer package gross weight limit of 29 kg for small quantities exception or limited to 30 g per inner package and 500 g per outer package for excepted quantities. Welding Material is not a hazardous material per DOT.

14.2. ICAO/IATA Classification for Domestic/International Air Required by Most Airlines

Identification number: UN3089

Proper shipping name: METAL POWDER, FLAMMABLE, N.O.S.

Class: 4.1

Packing group: II

Environmentally hazardous to the aquatic environment/marine pollutant: Exception applies due to 4.1 classification

Notes: Starting Material limited to 30 g per inner package and 500 g per outer package for excepted quantities. Welding Material limited to 5 kg per inner package for exception for marine pollutants.

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation for the substance or mixture

National regulations: Local, state, and national regulations may apply.

TSCA: The ingredients in this product are on the TSCA Inventory.

SARA Title III: Section 302 Extremely Hazardous Substance: Not reportable

Section 304: Not reportable

Section 311/312 Hazard Categories: Immediate (acute), Fire

Section 313: Aluminum (fume or dust), copper and copper compounds are subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (EPCRA or SARA Title III) and 40 CFR 372.

CERCLA RQ: Copper = 5,000 pounds (particles of 100 micrometers or less)

Copper compounds are CERCLA hazardous substances but no RQ is assigned,

15.2. Chemical safety assessment

CSA status: No information available.

SECTION 16: OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of this SDS.

Abbreviations and acronyms:

SAFETY DATA SHEET

Product Name: nVent ERICO Cadweld

Supersedes Date: 2019-05-31

SDS-ID: Cadweld_OSHA

Page 13 of 13

Revision Date: 2019-12-17

Version Number: Draft 2

ACGIH	American Conference of Industrial Hygienists
CAS No.	Chemical Abstracts Service registry number
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DOT HMR	Department of Transportation Hazardous Materials Regulations
ECHA	European Chemicals Agency
IARC	International Agency for Research on Cancer
IATA DGR	International Air Transport Association Dangerous Goods Regulations
ICAO	International Civil Aviation Organization
LC ₅₀ /LD ₅₀	Lethal concentration/dose to 50% of exposed laboratory animals
NIOSH	US National Institute of Occupational Safety and Health
n.o.s.	Not otherwise specified
NTP	National Toxicology Program
OSHA	US Occupational Safety Health Administration
PBT	Persistent, bioaccumulative and toxic
PEL	Permissible exposure limit
RQ	Reportable quantity
SARA	Superfund Amendments and Reauthorization Act
SDS	Safety data sheet
STOT	Specific target organ toxicity
Tel	Telephone number
TSCA	Toxic Substances Control Act
TWA	Time weighted average
UN	United Nations
US/USA	United States
vPvB	Very persistent and very bioaccumulative

Additional information: Hazard classification and other information based on 29 CFR 1910.1200 for OSHA, and on 49 CFR Part 173 and 2020 IATA Dangerous Goods Regulations for DOT/IATA transportation.

The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.

GE012A

SAFETY DATA SHEET

1. Identification

Product identifier: GE012A

Other means of identification

Synonyms: Silicone Sealant

Recommended use and restriction on use

Recommended use: Silicone Elastomer

Restrictions on use: For industrial use only.

Manufacturer/Importer/Distributor Information : Momentive Performance Materials LLC
260 Hudson River Road
Waterford NY 12188

Contact person : commercial.services@momentive.com

Telephone : General information
+1-800-295-2392

Emergency telephone number
Supplier : CHEMTREC
1-800-424-9300

2. Hazard(s) identification

Hazard Classification

Health Hazards

Skin Corrosion/Irritation	Category 2
Toxic to reproduction	Category 2

Unknown toxicity - Health

Acute toxicity, oral	0 %
Acute toxicity, dermal	0 %
Acute toxicity, inhalation, vapor	0 %
Acute toxicity, inhalation, dust or mist	0 %

Label Elements

Hazard Symbol:

GE012A



Signal Word: Warning

Hazard Statement: H315; Causes skin irritation.
H361; Suspected of damaging fertility or the unborn child.

Precautionary Statements

Prevention: Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.

Response: IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention. Specific treatment (see on this label). Take off contaminated clothing.

Storage: Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC): None.

Substance(s) formed under the conditions of use: Generates acetic acid during cure.

3. Composition/information on ingredients

GE012A

Mixtures

Chemical Identity	CAS number	Content in percent (%)*	Notes
Distillates, petroleum, hydrotreated middle	64742-46-7	10 - <15%	# This substance has workplace exposure limit(s).
Silane, dichlorodimethyl-, reaction products with silica	68611-44-9	5 - <10%	# This substance has workplace exposure limit(s).
Methyltriacetoxysilane	4253-34-3	3 - <5%	No data available.
Octamethylcyclotetrasiloxane	556-67-2	0.1 - <1%	# This substance has workplace exposure limit(s).

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

(1) The respirable particle(s) listed above are inextricably bound within the polymer matrix, and therefore does not present an inhalation hazard during normal use of this product. Tooling or machining of the cured product (sanding, cutting, milling) may release hazardous, respirable substances.

4. First-aid measures

Ingestion: If swallowed, do NOT induce vomiting. Give a glass of water.

Inhalation: If inhaled, remove to fresh air. If not breathing give artificial respiration using a barrier device. If breathing is difficult give oxygen. Get medical attention.

Skin Contact: To clean from skin, remove completely with a dry cloth or paper towel, before washing with detergent and water. If skin irritation occurs: Get medical advice/attention.

Eye contact: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Most important symptoms/effects, acute and delayed

Symptoms: No data available.

Hazards: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: Treatment is symptomatic and supportive.

5. Fire-fighting measures

GE012A

General Fire Hazards: Use standard firefighting procedures and consider the hazards of other involved materials.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Extinguish with foam, carbon dioxide or dry powder.

Unsuitable extinguishing media: water jet

Specific hazards arising from the chemical: No data available.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters: Firefighters must wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus with full face mask and full protective clothing.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Keep container closed. Avoid contact with skin and eyes. Use only in well-ventilated areas. Remove contact lenses before using sealant. Do not handle lenses until all sealant has been cleaned from the finger and hands. Product releases acetic acid during application and curing. Attention: Not for injection into humans.

Methods and material for containment and cleaning up: Wipe, scrape or soak up in an inert material and put in a container for disposal. Wash walking surfaces with detergent and water to reduce slipping hazard. Wear proper protective equipment as specified in the protective equipment section.

7. Handling and storage

Precautions for safe handling: Acetic acid is formed during processing. Wear appropriate personal protective equipment. Use only in well-ventilated areas. Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Keep containers tightly closed. See Section 8 of the SDS for Personal Protective Equipment. Sensitivity to static discharge is not expected.

Conditions for safe storage, including any incompatibilities: Keep out of the reach of children.

GE012A

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
Distillates, petroleum, hydrotreated middle - Inhalable fraction.	TWA	5 mg/m ³	US. ACGIH Threshold Limit Values, as amended (03 2015)
Distillates, petroleum, hydrotreated middle - Mist.	REL	5 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards, as amended (2010)
	STEL	10 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards, as amended (2010)
	PEL	5 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
	TWA	5 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended (1989)
	TWA	5 mg/m ³	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended (06 2008)
Distillates, petroleum, hydrotreated middle	ST ESL	3,500 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (11 2016)
	AN ESL	350 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (11 2016)
Distillates, petroleum, hydrotreated middle - Mist.	TWA PEL	5 mg/m ³	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended (01 2015)
Distillates, petroleum, hydrotreated middle	IDLH	2,500 mg/m ³	US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended (10 2017)
Silane, dichlorodimethyl-, reaction products with silica	TWA	0.8 mg/m ³	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (03 2016)
	TWA	20 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (03 2016)
Silane, dichlorodimethyl-, reaction products with silica - Particulate.	ST ESL	27 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (06 2018)
Octamethylcyclotetrasiloxane	TWA	5 ppm	
Octamethylcyclotetrasiloxane - Vapor.	ST ESL	1,000 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (11 2016)
	AN ESL	100 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (11 2016)
Octamethylcyclotetrasiloxane	TWA	10 ppm	US. OARS. WEELs Workplace Environmental Exposure Level Guide, as amended (2014)

This product contains one or more substances with an occupational exposure limit. However, the respirable particle(s) of this/these substance(s) are inextricably bound within the polymer matrix. Therefore, we do not expect an exposure to this/these substance(s) during normal use of this product. Tooling or machining of the cured product (sanding, cutting, milling) may release hazardous, respirable substances.

Appropriate Engineering Controls

Eye wash facilities and emergency shower must be available when handling this product. Use only in well-ventilated areas.

GE012A

Individual protection measures, such as personal protective equipment

General information:	Wear suitable gloves and eye/face protection.
Eye/face protection:	Safety glasses with side shields
Skin Protection	
Hand Protection:	Rubber gloves are recommended.
Other:	Wear suitable protective clothing and eye/face protection.
Respiratory Protection:	If inhalation exposure is expected, NIOSH/MSHA approved respiratory protection should be worn. Supplied air respirators may be required for non-routine or emergency situations. Respiratory protection must be provided in accordance with OSHA regulations (see 29CFR 1910.134).
Hygiene measures:	Avoid contact with eyes, skin, and clothing. Ensure adequate ventilation, especially in confined areas. Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. When using do not eat, drink or smoke.

9. Physical and chemical properties

Appearance

Physical state:	solid
Form:	Paste
Color:	Colorless
Odor:	Acetic acid.
Odor threshold:	No data available.
pH:	Not applicable
Melting point/freezing point:	Not applicable
Initial boiling point and boiling range:	Not applicable
Flash Point:	> 93.3 °C (estimated)
Evaporation rate:	< 1
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper:	No data available.
Explosive limit - lower:	No data available.
Heat of combustion:	No data available.
Vapor pressure:	Not applicable
Vapor density:	Not applicable
Density:	ca. 1.04 g/cm ³
Relative density:	ca. 1.04

GE012A

Solubility(ies)

Solubility in water:	Insoluble
Solubility (other):	Toluene
Partition coefficient (n-octanol/water) Log Pow:	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
SADT:	No data available.
Viscosity, dynamic:	No data available.
Viscosity, kinematic:	> 7 mm ² /s (40 °C)
VOC:	36 g/l ;

10. Stability and reactivity

Reactivity:	No dangerous reaction if used as recommended.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerization does not occur.
Conditions to avoid:	Keep away from moisture.
Incompatible Materials:	Strong Acids, Strong Bases Water.
Hazardous Decomposition Products:	Carbon dioxide Silicon dioxide. Formaldehyde. Acetic acid. This product contains methylpolysiloxanes which can generate formaldehyde at approximately 300 degrees Fahrenheit (150°C) and above, in atmospheres which contain oxygen. Formaldehyde is a skin and respiratory sensitizer, eye and throat irritant, acute toxicant, and potential cancer hazard. A MSDS for formaldehyde is available from Momentive.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	No data available.
Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion:	No data available.
Inhalation:	No data available.

GE012A

Skin Contact: No data available.

Eye contact: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: ATEmix : 5,831.1 mg/kg

Specified substance(s):

Methyltriacetoxysilane LD 50 (Rat, female): 1,830 mg/kg
LD 50 (Rat): 1,550 mg/kg

Octamethylcyclotetrasiloxane LD 50 (Rat): > 4,800 mg/kg

Dermal

Product: Not classified for acute toxicity based on available data.

Specified substance(s):

Octamethylcyclotetrasiloxane LD 50 (Rat): > 2,375 mg/kg

Inhalation

Product: Not classified for acute toxicity based on available data.

Specified substance(s):

Octamethylcyclotetrasiloxane LC50 (Rat): 36 mg/l

Repeated dose toxicity

Product: No data available.

Skin Corrosion/Irritation

Product: No data available.

Serious Eye Damage/Eye Irritation

Product: No data available.

Specified substance(s):

Octamethylcyclotetrasiloxane OECD-Guideline 405 (Acute Eye Irritation/Corrosion) (Rabbit): Non irritating

Respiratory or Skin Sensitization

Product: No data available.

GE012A

Carcinogenicity

Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro

Product: No data available.

Specified substance(s):

Octamethylcyclotetrasiloxane
Ames-Test (OECD-Guideline 471 (Genetic Toxicology: Salmonella typhimurium, Reverse Mutation Assay)): negative (not mutagenic)
Mouse Lymphoma Assay (OECD Guideline 476): negative (not mutagenic)

In vivo

Product: No data available.

Specified substance(s):

Octamethylcyclotetrasiloxane
Chromosomal aberration (OECD-Guideline 474 (Genetic Toxicology: Micronucleus Test)) Inhalation (Rat, male and female): negative

Reproductive toxicity

Product: No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Aspiration Hazard

Product: No data available.

Other effects: Acetic acid released during curing. No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

GE012A

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: No data available.

Specified substance(s):

Octamethylcyclotetrasiloxane 3.7 % (29 d, 310 Ready Biodegradability - CO₂ in Sealed Vessels (Headspace Test)) Not readily biodegradable.

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available.

Specified substance(s):

Octamethylcyclotetrasiloxane Fathead Minnow, Bioconcentration Factor (BCF): 12.40

Partition Coefficient n-octanol / water (log K_{ow})

Product: No data available.

Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

GE012A

Distillates, petroleum, hydrotreated middle	No data available.
Silane, dichlorodimethyl-, reaction products with silica	No data available.
Methyltriacetoxysilane	No data available.
Octamethylcyclotetrasiloxane	No data available.

Other adverse effects: No data available.

13. Disposal considerations

General information: The generation of waste should be avoided or minimized wherever possible. See Section 8 for information on appropriate personal protective equipment. Do not discharge into drains, water courses or onto the ground.

Disposal instructions: Disposal should be made in accordance with federal, state and local regulations.

Contaminated Packaging: Dispose of as unused product.

14. Transport information

DOT
Not regulated.

IMDG
Not regulated.

IATA
Not regulated.

Special precautions for user: This product is not regarded as dangerous goods according to the national and international regulations on the transport of dangerous goods.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
None present or none present in regulated quantities.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)
None present or none present in regulated quantities.

GE012A

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended

<u>Chemical Identity</u>	<u>OSHA hazard(s)</u>
Dimethylpolysiloxane	No OSHA Hazards
Distillates, petroleum, hydrotreated middle	Causes mild skin irritation.; Systemic effects
Silane, dichlorodimethyl-, reaction products with silica	No OSHA Hazards
Methyltriacetoxysilane	Corrosive to skin and eyes.; Corrosive to eyes

CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Skin Corrosion or Irritation
Reproductive toxicity

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

None present or none present in regulated quantities.

SARA 311/312 Hazardous Chemical

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65

No ingredient requiring a warning under CA Prop 65.

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity

Dimethylpolysiloxane
Distillates, petroleum, hydrotreated middle
Silane, dichlorodimethyl-, reaction products with silica

GE012A

Methyltriacetoxysilane
METHYLDIACETOXYISOPROPOXYSILANE

US. Massachusetts RTK - Substance List

Chemical Identity

Distillates, petroleum, hydrotreated middle

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity

Distillates, petroleum, hydrotreated middle

US. Rhode Island RTK

Chemical Identity

Distillates, petroleum, hydrotreated middle

GE012A

Inventory Status:

Australia AICS:	On or in compliance with the inventory	Remarks: None.
Canada DSL Inventory List:	Q (quantity restricted)	Remarks: None.
EINECS, ELINCS or NLP:	On or in compliance with the inventory	Remarks: None.
Japan (ENCS) List:	On or in compliance with the inventory	Remarks: None.
China Inv. Existing Chemical Substances:	On or in compliance with the inventory	Remarks: None.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory	Remarks: None.
Canada NDSL Inventory:	Not in compliance with the inventory.	Remarks: None.
Philippines PICCS:	On or in compliance with the inventory	Remarks: None.
US TSCA Inventory:	On or in compliance with the inventory	Remarks: None.
New Zealand Inventory of Chemicals:	On or in compliance with the inventory	Remarks: None.
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory	Remarks: None.

16. Other information, including date of preparation or last revision

HMIS Hazard ID

Health	*	2
Flammability		0
Physical Hazards		1
PERSONAL PROTECTION		

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

Issue Date: 08/25/2020

Revision Date: No data available.

Version #: 4.2

Further Information: No data available.

GE012A

Disclaimer:

Notice to reader

Unless otherwise specified in section 1, Momentive products are intended for use in the manufacture and/or formulation of products and are not intended for direct consumer use. These products are not intended for long-lasting (> 30 days) implantation, injection or direct ingestion into the human body, nor for use in the manufacture of multiple use contraceptives. Keep out of the reach of children.

Further Information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safehandling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision date : 2019-01-25
Publication date : 2018-08-28

Version number : 1.2

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

SDS : 33614
Lamp Material Data Sheet code (LMDS) : Philips CFN-10001B

* Supplier : Signify North America Corporation
200 Franklin Square Drive
Somerset, NJ 08873-4186

Tradename : PHILIPS COMPACT FLUORESCENT LAMPS CFL-ni - ALL TYPES

Other means of identification : ALTO, non-ALTO: PL-C, PL-H, PL-L, PL-Q, PL-S, PL-T

Relevant identified uses of the substance or mixture and uses advised against

General description : Compact Fluorescent Lamp
Recommended Use : Various
Uses advised against : No data available

Details of the supplier of the safety data sheet

Supplier safety data sheet : Philips Electronics Nederland B.V., Philips Environment & Safety, High Tech Campus 37, 5656 AE Eindhoven, Tel. +31 (0)40 27 41 645
Responsible department : hazcom@philips.com

Emergency telephone number

Emergency telephone number:
CHEMTREC : +1 (0)800-424-9300

SECTION 2: Hazards identification

Classification of the substance or mixture

Classification in accordance with 29 CFR 1910.1200

Not classified.

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). This product is an article and as such does not require an SDS per the OSHA hazard communication standard.

Label elements

Labelling in accordance with 29 CFR 1910.1200

Label: not applicable

Remarks on labelling: none

Other hazards

none.

SECTION 3: Composition/information on ingredients

Component	CAS number
INERT MATERIAL	-
FLUORESCENT POWDER	-
KRYPTON ⁸⁵	139883-27-2
INDIUM	7440-74-6
MERCURY	7439-97-6
BISMUTH	7440-69-9

Remark: The product contains: 1.4 - 3.5 mg Mercury

SECTION 4: First aid measures

Description of first aid measures

Skin : Not applicable.
Ingestion : Not applicable.
Inhalation : Not applicable.
Eyes : Not applicable.

Most important symptoms and effects, both acute and delayed

Skin	local	:	Under normal circumstances not applicable.
	general	:	Under normal circumstances not applicable
Ingestion	local	:	Under normal circumstances not applicable
	general	:	Under normal circumstances not applicable
Inhalation	local	:	Under normal circumstances not applicable
	general	:	Under normal circumstances not applicable
Eyes	local	:	Under normal circumstances not applicable

Remarks symptoms : None

Indication of any immediate medical attention and special treatment needed

None

SECTION 5: Firefighting measures

Extinguishing media

Suitable fire-extinguisher
determined by surrounding.

Unsuitable fire-extinguisher
not traceable.

Special hazards arising from the substance or mixture

Hazardous decomposition products in fire: Tin oxide, Mercury oxides, metal oxide

Advice for firefighters

In the event of fire, wear protective clothing and use breathing apparatus that is independent of the ambient air.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions

In case of broken articles, use protective equipment. Evacuate area.

For non-emergency personnel

Protective equipment

Wear protective gloves/protective clothing/eye protection/face protection.

Emergency procedure

Ventilate affected area.

For emergency responders

Use appropriate respiratory protection. Personal protection equipment

Methods and material for containment and cleaning up

For containment

Collect materials needed to clean up broken bulb: stiff paper or cardboard; sticky tape; damp paper towels or disposable wet wipes (for hard surfaces); and a glass jar with a metal lid or a sealable plastic bag. Be thorough in collecting broken glass.

For cleaning up

DO NOT VACUUM. Vacuuming is not recommended unless broken glass remains after all other cleanup steps have been taken. Vacuuming could spread mercury-containing powder or mercury vapor. Scoop up glass fragments using stiff paper or cardboard and sticky tape. Place cleanup materials in a sealable container.

Other information

No information available.

SECTION 7: Handling and storage

Precautions for safe handling

Local exhausting : Under normal circumstances not applicable.

Conditions for safe storage, including any incompatibilities

Storage conditions : No special precautions.

SECTION 8: Exposure controls/personal protection

Control parameters

Exposure limits :

applicable to: United States of America (25 °C; 1013 mbar)

TWA(8 hours): 0.025 mg/m³ S MERCURY- [according to ACGIH]

TWA (8 hours): 0.1 mg/m³ C MERCURY- [according to NIOSH]

TWA (8 hours): 0.1 mg/10m³ C MERCURY – [according to OSHA PEL]

TWA (8 hours): 2 mg/m³ INDIUM- [according to NIOSH]

C=Ceiling; S=Skin

Remarks exposure limits : none

Appropriate engineering controls: Under normal circumstances not applicable

Exposure controls

Advised personal protection:

Hands:	Under normal circumstances not applicable.
Breakthrough time:	Under normal circumstances not applicable.
Eyes:	Under normal circumstances not applicable.
Inhalation:	Under normal circumstances not applicable.
Skin:	Under normal circumstances not applicable.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	:	article	
Color	:	type dependent	
Odor	:	odorless	
Odor threshold (20°C; 1013 mbar)	:	not traceable	
pH	:	not applicable	
Melting point/freezing point	:	not traceable	
Boiling point/range	:	not traceable	
Flash point/range	:	not applicable	
Evaporation rate/range	:	not applicable	
Vapor rate/range	:	not applicable	
Flammability (solid, gas)	:	data not available	
Upper/lower flammability or explosive limit	:	not applicable	
Vapor pressure	:	not applicable	
Vapor density	:	not applicable	
Density	:	not traceable	
Solubility in water	:	not applicable	
Log Po/w: 4.5		MERCURY	Source : Chemicalcards
Auto-ignition temperature	:	not applicable	
Decomposition temperature	:	not traceable	
Viscosity	:	not applicable	
Dust explosions possible in air	:	not applicable	
Oxidizing properties	:	no	

SECTION 10: Stability and reactivity

Reactivity

Not applicable.

Chemical stability

The substance or mixture is stable under normal conditions.

Possibility of hazardous reactions

Reactions with water : no

Other hazardous conditions : Data not available.

Conditions to avoid

Data not available.

Incompatible materials

Hazardous reactions with : none

Hazardous decomposition products

Hazardous decomposition products at heating : none

SECTION 11: Toxicological information

Information on toxicological effects

Acute oral toxicity

No data available.

Acute dermal toxicity

No data available.

Acute inhalation toxicity

No data available.

Skin corrosion/irritation

The substance or mixture is not classified for skin corrosion/-irritation.

Serious eye damage/irritation

The substance or mixture is not classified for serious eye damage/irritation.

Respiratory or skin sensitization

The substance or mixture is not classified for respiratory or skin sensitization.

Germ cell mutagenicity

The substance or mixture is not classified for germ cell mutagenicity.

Carcinogenicity

IARC: Group 3: Not classifiable as to its carcinogenicity to humans (Mercury)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

The substance or mixture is not classified for reproductive toxicity.

Specific target organ toxicity-single exposure

The substance or mixture is not classified for specific target organ toxicity-single exposure.

Specific target organ toxicity-repeated exposure

The substance or mixture is not classified for specific target organ toxicity-repeated exposure.

Aspiration hazard

The substance or mixture is not classified for aspiration hazard.

Symptoms

Skin	local	:	Not applicable.
	general	:	Not applicable.
Ingestion	local	:	Not applicable.
	general	:	Not applicable.
Inhalation	local	:	Not applicable.
	general	:	Not applicable.

Eyes	local	:	Not applicable.
Remarks symptoms		:	None

SECTION 12: Ecological information

Toxicity

Ecotoxicity

LC-50: 0.004 mg/l/96H (Fish)	MERCURY	Source	: Easi View
EC-50: 0.0205 mg/l/48H (Daphnia)	MERCURY	Source	: IFA- Gestis
IC-50: 0.3 mg/l/72H (Algae)	MERCURY	Source	: Easi View

Persistence and degradability

Biological oxygen demand:	not applicable
Chemical oxygen demand:	not applicable
Degradability:	not applicable

Bioaccumulative potential

Bioconcentration factor (BCF)	: >2500	MERCURY

Mobility in soil

Henry Constant	: Not applicable

Other adverse effects

Remarks on eco-toxicity:	none

SECTION 13: Disposal considerations

Waste treatment methods

Remainder material or uncleaned empty packaging's have to be incinerated in a proper installation or dumped on an approved landfill, in accordance with local and national legislation.

SECTION 14: Transport information

UN number

DOT/49CFR	: none
IMDG/IMO	: none
IATA/ICAO	: 3506
Remarks IATA/ICAO	: For transport exemptions consult IATA special provisions A48, A69 and A191.

UN proper shipping name

DOT/49CFR	: none
IMDG/IMO	: none
IATA/ICAO	: MERCURY CONTAINED IN MANUFACTURED ARTICLES

Transport hazard class(es)

DOT/49CFR : none	IMDG/IMO : none	IATA/ICAO : 8 (6.1)

Packing group

DOT/49CFR: none	IMDG/IMO : none	IATA/ICAO : none

Environmental hazards

Marine pollutant : no

Special precautions for user

EmS (IMDG/IMO) : none

Transport in bulk according to Annex II of Marpol and the IBC Code

Data not available.

SECTION 15: Regulatory information**Safety, health and environmental regulations/legislation specific for the substance or mixture****US Federal regulations**

SARA 313: Mercury

SARA 311/312: not applicable.

HMIS Classification: not applicable.

U.S. Clean Water Act Section 307 – Toxic Pollutants: Mercury

National inventories

Articles are exempted from the Toxic Substances Control Act Inventory (TSCA-USA).

International inventories

DSL/NDL: This substance is on the DSL (Mercury, Indium, Bismuth)

SECTION 16: Other information

Remarks on SDS : Toxic mercury vapors can be released if the lamp is broken.
For transport exemptions consult applicable regulations.

A key or legend to abbreviations and acronyms used in the safety data sheet

GHS	Globally Harmonized System of Classification and Labelling of Chemicals
CAS	Chemical Abstracts Service
TGG = TWA	Time Weighted Average
LEL	Lower Explosive Limit
UEL	Upper Explosive Limit
NTP	National Toxicology Program
KHC	Known Human Carcinogen
RAHC	Reasonably Anticipated Human Carcinogen
IARC	International Agency for Research on Cancer
OSHA	Occupational Safety & Health Administration
DOT	US Department of Transportation
RID	Règlement concernant le transport international ferroviaire des marchandises dangereuses
UN	United Nations
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
EmS	Emergency Schedule
SARA	Superfund Amendments and Reauthorization Act

DSL
NDSL

Canadian Domestic Substances List
Canadian Non-Domestic Substances List

* Point to alterations with regard to the previous version.

The information provided in this Safety Data Sheet is believed to be correct as of the date issued. Philips Electronics Nederland B.V. makes no warranty as to its contents, nor as to its fitness for any particular purpose or use.



SAFETY DATA SHEET

1. Identification

Product identifier	Zinc-It® Instant Cold Galvanize
Other means of identification	
Product code	18413
Recommended use	Coating (for use in shop applications or on non-stationary structures)
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufactured or sold by:	
Company name	CRC Industries, Inc.
Address	885 Louis Dr. Warminster, PA 18974 US
Telephone	
General Information	215-674-4300
Technical Assistance	800-521-3168
Customer Service	800-272-4620
24-Hour Emergency (CHEMTREC)	800-424-9300 (US) 703-527-3887 (International)
Website	www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, dermal	Category 4
	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Carcinogenicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, repeated exposure	Category 1
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 1
OSHA defined hazards	Not classified.	
Label elements		



Signal word	Danger
Hazard statement	Highly flammable liquid and vapor. Harmful if swallowed, in contact with skin or if inhaled. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. Suspected of causing cancer by inhalation. Causes damage to organs (central nervous system, liver, kidneys) through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Use only with adequate ventilation; maintain ventilation during use and until all vapors are gone. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Do not breathe vapor. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment.

Response

If swallowed: Immediately call a poison center/doctor. Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical attention. Wash contaminated clothing before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If exposed or concerned: Get medical attention. In case of fire: Do not use water. Collect spillage.

Storage

Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national regulations.

Hazard(s) not otherwise classified (HNOC)

None known.

Supplemental information

14.5% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Zinc, Elemental		7440-66-6	70 - 80
Xylene		1330-20-7	10 - 20
Aliphatic hydrocarbon		Mixture	1 - 3
Ethylbenzene		100-41-4	1 - 3

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing stops, provide artificial respiration. Oxygen or artificial respiration if needed. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact

Take off immediately all contaminated clothing. Wash with plenty of soap and water. Get medical advice/attention if you feel unwell. Wash contaminated clothing before reuse.

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion

Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed

Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information

Take off all contaminated clothing immediately. IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media

Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media

Water.

Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed. Do not use water. Hydrogen gas may form producing an explosive environment.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Do not use water. Do not mix with acid or caustic materials.
General fire hazards	Highly flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors and spray mists. Do not breathe vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. Dike far ahead of spill for later disposal. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. Use non-sparking tools and explosion-proof equipment. Do not breathe vapor. Do not taste or swallow. Avoid inhalation of vapors and spray mists. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Wash contaminated clothing before reuse. Observe good industrial hygiene practices. For product usage instructions, please see the product label. No Smoking in areas where this material is used. Keep containers closed and upright when not in use. If the painted surface is to be welded, use a fan across the work area to prevent fumes from rising to the welder's face. Pump air into welder's hood to provide positive air pressure to prevent fumes from getting to welder.
Conditions for safe storage, including any incompatibilities	Keep away from heat, sparks and open flame. Store in a cool, dry place out of direct sunlight. Keep container tightly closed. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

U.S. - OSHA Components

Type	Value
Aliphatic hydrocarbon TWA	5 mg/m3

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) Components

Type	Value
Ethylbenzene (CAS 100-41-4)	435 mg/m3
Xylene (CAS 1330-20-7)	100 ppm 435 mg/m3 100 ppm

ACGIH Components	Type	Value
Aliphatic hydrocarbon	TWA	5 mg/m3
US. ACGIH Threshold Limit Values Components	Type	Value
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm
Xylene (CAS 1330-20-7)	STEL	150 ppm
	TWA	100 ppm
US. NIOSH: Pocket Guide to Chemical Hazards Components	Type	Value
Ethylbenzene (CAS 100-41-4)	STEL	545 mg/m3
		125 ppm
	TWA	435 mg/m3
		100 ppm

Biological limit values

ACGIH Biological Exposure Indices Components	Value	Determinant	Specimen	Sampling Time
Ethylbenzene (CAS 100-41-4)	0.15 g/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine	*
Xylene (CAS 1330-20-7)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*

* - For sampling details, please see the source document.

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower should be available when handling this product. Provide eyewash station. Eye wash fountain and emergency showers are recommended.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear protective gloves such as: Nitrile. Neoprene.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies. Air monitoring is needed to determine actual employee exposure levels.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Observe any medical surveillance requirements. When using do not smoke. Wash hands after handling and before eating. Keep away from food and drink.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Liquid.
Color	Gray.
Odor	Solvent.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	-138.8 °F (-94.9 °C) estimated

Initial boiling point and boiling range	210 °F (98.9 °C)
Flash point	45 °F (7.2 °C) Tag Closed Cup
Evaporation rate	Slow.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	0.7 %
Flammability limit - upper (%)	22.7 %
Vapor pressure	1.2 hPa estimated
Vapor density	> 1 (air = 1)
Relative density	2.47
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	810 °F (432.2 °C) estimated
Decomposition temperature	Not available.
Viscosity (kinematic)	Not available.
Percent volatile	58.1 %

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Contact with incompatible materials.
Incompatible materials	Never add water to this product. Acids. Alkalines. Caustics. Oxidizing agents.
Hazardous decomposition products	Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Harmful if inhaled. May cause damage to organs through prolonged or repeated exposure by inhalation.
Skin contact	Harmful in contact with skin. Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Harmful if swallowed. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics	Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity	May be fatal if swallowed and enters airways. Harmful if inhaled. Harmful in contact with skin. May cause respiratory irritation.

Product	Species	Test Results
Zinc-It® Instant Cold Galvanize		
Acute		
Dermal		
LD50	Rabbit	28264 mg/kg estimated
Inhalation		
LC50	Rat	34412 ppm, 4 hours estimated
		151 mg/l, 4 hours estimated

Product	Species	Test Results
Oral LD50	Rat	2467 mg/kg estimated

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Suspected of causing cancer by inhalation.

IARC Monographs. Overall Evaluation of Carcinogenicity

Ethylbenzene (CAS 100-41-4)	2B Possibly carcinogenic to humans.
Xylene (CAS 1330-20-7)	3 Not classifiable as to carcinogenicity to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Not available.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Causes damage to organs (central nervous system, liver, kidneys) through prolonged or repeated exposure.
Aspiration hazard	May be fatal if swallowed and enters airways. If aspirated into lungs during swallowing or vomiting, may cause chemical pneumonia, pulmonary injury or death.
Chronic effects	Causes damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity	Very toxic to aquatic life with long lasting effects.

Product			Species	Test Results
Zinc-It® Instant Cold Galvanize				
Aquatic				
<i>Acute</i>				
Crustacea	EC50	Daphnia	0.0934 mg/l, 48 hours estimated	
Components			Species	Test Results
Ethylbenzene (CAS 100-41-4)				
Aquatic				
<i>Acute</i>				
Crustacea	EC50	Water flea (Daphnia magna)	2.1 mg/l, 48 hours	
Fish	LC50	Fathead minnow (Pimephales promelas)	12.1 mg/l, 96 hours	
Xylene (CAS 1330-20-7)				
Aquatic				
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	9.5 - 19.2 mg/l, 96 hours	
Zinc, Elemental (CAS 7440-66-6)				
Aquatic				
Fish	LC50	Bony fish superclass (Osteichthyes)	0.52 - 3.59 mg/l, 96 hours	
<i>Acute</i>				
Crustacea	EC50	Water flea (Daphnia magna)	0.068 mg/l, 48 hours	
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	0.482 mg/l, 96 hours	

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Ethylbenzene	3.15
Xylene	3.12 - 3.2

Bioconcentration factor (BCF)

Xylene	15

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products If discarded, this product is considered a RCRA ignitable waste, D001. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose in accordance with all applicable regulations.

Hazardous waste code D001: Waste Flammable material with a flash point <140 F

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN1263
UN proper shipping name	Paint, Limited Quantity
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	III
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	B1, B52, IB3, T2, TP1, TP29
Packaging exceptions	150
Packaging non bulk	173
Packaging bulk	242

IATA

UN number	UN1263
UN proper shipping name	Paint, Limited Quantity
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	No.
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

IMDG

UN number	UN1263
UN proper shipping name	PAINT or PAINT RELATED MATERIAL, LIMITED QUANTITY
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	No.
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

SARA 304 Emergency release notification

Not regulated.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Ethylbenzene (CAS 100-41-4)

Xylene (CAS 1330-20-7)

Zinc, Elemental (CAS 7440-66-6)

CERCLA Hazardous Substance List (40 CFR 302.4)

Ethylbenzene (CAS 100-41-4)

Xylene (CAS 1330-20-7)

Zinc, Elemental (CAS 7440-66-6)

CERCLA Hazardous Substances: Reportable quantity

Ethylbenzene (CAS 100-41-4) 1000 LBS

Xylene (CAS 1330-20-7) 100 LBS

Zinc, Elemental (CAS 7440-66-6) 1000 LBS

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Ethylbenzene (CAS 100-41-4)

Xylene (CAS 1330-20-7)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA) Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 Immediate Hazard - Yes

Hazard categories Delayed Hazard - Yes

Fire Hazard - Yes

Pressure Hazard - No

Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

US state regulations

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Ethylbenzene (CAS 100-41-4)

Xylene (CAS 1330-20-7)

Zinc, Elemental (CAS 7440-66-6)

US. Massachusetts RTK - Substance List

Ethylbenzene (CAS 100-41-4)

Xylene (CAS 1330-20-7)

Zinc, Elemental (CAS 7440-66-6)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Rhode Island RTK

Ethylbenzene (CAS 100-41-4)

Xylene (CAS 1330-20-7)

Zinc, Elemental (CAS 7440-66-6)

US. New Jersey Worker and Community Right-to-Know Act

Ethylbenzene (CAS 100-41-4)

Xylene (CAS 1330-20-7)

Zinc, Elemental (CAS 7440-66-6)

US. Pennsylvania Worker and Community Right-to-Know Law

Ethylbenzene (CAS 100-41-4)

Xylene (CAS 1330-20-7)

Zinc, Elemental (CAS 7440-66-6)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Ethylbenzene (CAS 100-41-4)

Listed: June 11, 2004

Volatile organic compounds (VOC) regulations

EPA

VOC content (40 CFR 51.100(s)) 20 %

Architectural coatings (40 CFR 59, Subpt. D) Not regulated

State

Architectural coatings Not regulated

VOC content 493.7 g/l

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	08-24-2015
Revision date	01-21-2016
Prepared by	Allison Cho
Version #	02
Further information	Not available.
HMIS® ratings	Health: 2* Flammability: 3 Physical hazard: 1 Personal protection: J
NFPA ratings	Health: 2 Flammability: 3 Instability: 1

NFPA ratings



Disclaimer

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.



Safety Data Sheet
OSHA Hazard Communication Standard
29 CFR 1910.1200. Prepared to GHS Rev 3.

Date of issue: 06.05.2023

Page: 1/7

Trade name: Duct Seal

SECTION 1: Identification

Product identifier used on the label:

Product Name: Duct Seal

Other means of identification:

Product Code Number: 31-601, 31-605

Recommended use of the chemical and restrictions on use:

Recommended use: Duct Sealer

Recommended restrictions: Uses other than those described above.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:

Company Name: IDEAL INDUSTRIES, INC.

Company Address: Becker Place,
Sycamore, IL 60178

Company Telephone: Office hours (Mon – Fri)
7AM - 5 PM (CDT)
(815)895-5181

Company Contact Name: Darryl Docter.

Company Contact Email: IDEAL@IDEALINDUSTRIES.COM

Emergency phone number: 24 HOUR EMERGENCY NUMBER:
(815)895-5181.

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:

Not classified as hazardous under OSHA HSC 2012

GHS Signal word: None Required

GHS Hazard statement(s): None required

GHS Hazard symbol(s): None required

GHS Precautionary statement(s): None required

Hazard(s) not otherwise

Classified (HNOC): None known

Percentage of ingredient(s) of unknown acute toxicity:

Not applicable

SECTION 3: Composition/information on ingredients

None of chemical raw materials contained in this formulation are considered hazardous under the OSHA Hazard Communication Standard and therefore do not need reporting in this section.

SECTION 4: First-aid measures

Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion:

Inhalation: Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Oxygen should only be administered by qualified personnel. Seek medical advice.

Skin contact: Wash with water and soap and rinse thoroughly. Seek medical advice if irritation or pain develops.

Eye contact: In case of contact with eyes, flush with water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician if symptoms develop.

Ingestion: Do NOT induce vomiting. If swallowed, wash mouth out with water provided the person is conscious. NEVER GIVE LIQUIDS TO AN UNCONCIOUS PERSON. Call a physician if symptoms develop.

Most important symptoms/effects, acute and delayed:

None known

Indication of immediate medical attention and special treatment needed:

If any symptoms are observed, contact a physician and give them this SDS sheet. Treat symptomatically.

SECTION 5: Fire-fighting measures

Suitable (and unsuitable) extinguishing media:

Suitable extinguishing media: Dry chemical, foam, water spray, carbon dioxide.

Unsuitable extinguishing media: None known

Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

None expected.

Hazardous combustion products may include the following substances: Carbon oxides

Special protective equipment and precautions for fire-fighters:

Use water spray or fog for cooling exposed containers. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Evacuate all non-emergency personnel from area. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through the spilled material. Minimize contact with skin or eyes. Provide adequate ventilation. Wear appropriate protective equipment, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions:

Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways.

Methods and material for containment and cleaning up:

Collect spillage and transfer to a lidded container for disposal or recovery. Dispose of via a licensed waste disposal contractor. See Section 1 for emergency contact information and Section 13 for waste disposal.

SECTION 7: Handling and storage

Precautions for safe handling:

Wear recommended personal protective equipment (See Section 8). Provide adequate ventilation in process areas. Avoid contact with eyes, skin and clothing. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Conditions for safe storage, including any incompatibles:

Keep only in original container. Store in a dry, well-ventilated place. Keep container closed when not in use. Make sure containers are properly labeled. Store away from incompatible materials. Store at 40-180 °F
Incompatible materials: Oxidizing agents.

SECTION 8: Exposure controls/personal protection

OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.

None known.

Appropriate engineering controls:

Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

Provide eyewash station. Eye wash fountain and emergency showers are recommended. Concentrations should be monitored hazardous substances in the workplace in accordance with recognized test methods. Mode, method, type and frequency of testing and measurement of harmful factors in the working environment should meet the requirements of local/regional/national laws.

Duct Seal

Individual protection measures, such as personal protective equipment:

Eye/face protection: None required but the use of safety glasses is recommended. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US).

Skin and Hand protection: None required but use of chemical resistant (rubber, nitrile) gloves is recommended. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory protection: None required. Use supplied-air respiratory protection in enclosed spaces, if needed.

General hygiene considerations: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

SECTION 9: Physical and chemical properties

Appearance (physical state, color, etc.):

Physical state: Solid Putty.

Color: Dark Gray.

Odor: None.

Odor threshold: Not determined.

pH: Not determined.

Melting point/freezing point: Not determined.

Initial boiling point and 212 °F (100 °C)

boiling range:

Flash point: 310 °C.

Evaporation rate: Not determined

Flammability (solid, gas): Not applicable

Upper/lower flammability or explosive limits

Flammability limit – lower (%): Not determined

Flammability limit – upper (%): Not determined

Explosive limit – lower (%): Not determined

Explosive limit – upper (%): Not determined

Vapor pressure: Not determined

Vapor density: Not determined

Relative density: 1.78

Solubility (ies): Insoluble.

Partition coefficient (n-octanol/water): Not determined.

Auto-ignition temperature: Not determined

Decomposition temperature: Not determined

Viscosity: 2000-40000 cps

SECTION 10: Stability and reactivity

Reactivity:	Not reactive under recommended storage and handling conditions.
Chemical stability:	Stable under recommended storage and handling conditions.
Possibility of hazardous reactions:	None known.
Conditions to avoid:	None known.
Incompatible materials:	Oxidizing agents
Hazardous decomposition Products:	None expected, although in a fire, Carbon oxides will be formed.

SECTION 11: Toxicological information

Information on likely routes of exposure:

Inhalation:	Expected to be a route of exposure
Ingestion:	Expected to be a route of exposure
Skin:	Expected to be a route of exposure
Eyes:	Expected to be a route of exposure

Target Organs: Eyes, Skin, Gastrointestinal system

Symptoms related to the physical, chemical, and toxicological characteristics:

None expected.

Delayed and immediate effects and chronic effects from short or long-term exposure:

None known.

Numerical measures of toxicity (such as acute toxicity estimates): None known.

Acute Toxicity:	Does not meet the criteria for classification
Skin corrosion/irritation:	Does not meet the criteria for classification
Serious eye damage/eye irritation:	Does not meet the criteria for classification
Respiratory sensitization:	Does not meet the criteria for classification
Skin sensitization:	Does not meet the criteria for classification
Germ cell mutagenicity:	Does not meet the criteria for classification
Carcinogenicity:	Does not meet the criteria for classification.
Reproductive toxicity:	Does not meet the criteria for classification
Specific target organ toxicity-Single exposure:	Does not meet the criteria for classification
Specific target organ toxicity-Repeat exposure:	Does not meet the criteria for classification,
Aspiration hazard:	Does not meet the criteria for classification

Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA: None listed.

SECTION 12: Ecological information

Ecotoxicity (aquatic and terrestrial, where available):

Not expected to be toxic to the aquatic environment.

Persistence and Degradability:

No information available

Bioaccumulative Potential:

No information available.

Mobility in Soil:

No information available.

Other adverse effects (such as hazardous to the ozone layer):

No information available.

SECTION 13: Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging.**Product**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification. Dispose via a licensed waste disposal contractor. Observe all federal, state/provincial and municipal regulations.

Contaminated packaging

Since emptied containers retain product residue, follow label warnings even after container is emptied. Empty containers should be properly labeled to supplier or everywhere there is a recovery program.

SECTION 14: Transport Information

US Department of Transportation Classification (49CFR)

Not regulated under DOT.

IMDG (Transport by sea)

Not regulated under IMDG.

IATA (Country variations may apply)

Not regulated under IATA.

Environmental hazards

Marine pollutant: No

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

No further relevant information available.

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.

None known

SECTION 15: Regulatory Information

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is not classified as hazardous under OSHA.

Toxic Substances Control Act (TSCA) - All substances in this product are listed as required or are exempt from the TSCA inventory.

CERCLA RQ (lbs) Ingredients (> 0.1%):

None listed.

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311, 312 and 313:

Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A) (> 0.1%):

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Section 311/312 (40 CFR 370) (> 0.1%):

Not applicable.

Section 313 Toxic Release Inventory (40 CFR 372) (> 0.1%):

None listed.

STATE REGULATIONS:

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements, you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986: None listed.

Massachusetts Right to Know:

No components are listed on the Massachusetts Right to Know list

New Jersey Right to Know:

No components are listed on the New Jersey Right to Know list

Pennsylvania Right to Know:

No components are listed on the Pennsylvania Right to Know list

SECTION 16: Other Information

Revision Date: June 5, 2023

To the best of our knowledge, the information contained herein is accurate. However IDEAL INDUSTRIES INC. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

CFS-S SIL SL / CFS-S SIL GG

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 9/26/2022

Issue date: 9/26/2022 Supersedes: 5/26/2020

Version: 3.3

SECTION 1: Identification

1.1. Identification

Product form	Mixture
Product name	CFS-S SIL SL / CFS-S SIL GG
Product code	BU Fire Protection



1.2. Recommended use and restrictions on use

Use of the substance/mixture	Firestop silicone sealant

1.3. Supplier

Supplier

Hilti, Inc.
Legacy Tower, Suite 1000
7250 Dallas Parkway
Plano, TX 75024
USA
T +1 9724035800
1-800-879-8000 toll free - F +1 918 254 0522

Department issuing data specification sheet

Hilti AG
Feldkircherstraße 100
Schaan, 9494
Liechtenstein
T +423 234 2111
chemicals.hse@hilti.com

1.4. Emergency telephone number

Emergency number	Chem-Trec Tel.: 1 800 424 9300 (USA, PR, Virgin Islands, Canada) Tel.: 703 527 3887 (Other countries) +1 918 8723000 1-800-879-8000 toll free

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin sensitisation, Category 1	H317	May cause an allergic skin reaction.
Reproductive toxicity, Category 2	H361	Suspected of damaging fertility or the unborn child.
Full text of H-statements: see section 16		

2.2. GHS Label elements, including precautionary statements

GHS US labelling

Hazard pictograms (GHS US)



Signal word (GHS US)

Warning

Hazard statements (GHS US)

H317 - May cause an allergic skin reaction.
H361 - Suspected of damaging fertility or the unborn child.

Precautionary statements (GHS US)

P261 - Avoid breathing vapours.
P280 - Wear protective gloves, protective clothing, eye protection.

CFS-S SIL SL / CFS-S SIL GG

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

P302+P352 - If on skin: Wash with plenty of water.
P308+P313 - If exposed or concerned: Get medical advice/attention.

2.3. Other hazards which do not result in classification

Other hazards which do not result in classification In use the product releases 2-butanone oxime (methyl ethyl ketoxime; MEKO) (0-24h: <0.2%/h & 24-48h: <0.02%/h) which vaporises.
In cases of prolonged exposure MEKO may damage nasal membranes. If MEKO is inhaled in large quantities over prolonged periods of time there may be irreversible damage to health:
H351: Suspected of causing cancer.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Methyltris(1-methylpropylideneaminoxysilane	CAS-No.: 22984-54-9	2.5 – 5	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1, H317
Titanium dioxide	CAS-No.: 13463-67-7	1 – 2.5	Carc. 2, H351
octamethylcyclotetrasiloxane	CAS-No.: 556-67-2	0.1 – 1	Flam. Liq. 3, H226 Repr. 2, H361 Aquatic Chronic 4, H413

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general IF exposed or concerned: Get medical advice/attention.
First-aid measures after inhalation Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell.
First-aid measures after skin contact Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Potential adverse human health effects and symptoms Based on available data, the classification criteria are not met.
Symptoms/effects after inhalation May cause an allergic skin reaction.
Symptoms/effects after skin contact May cause an allergic skin reaction.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

CFS-S SIL SL / CFS-S SIL GG

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire	Carbon dioxide. Carbon monoxide.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	Self-contained breathing apparatus. Complete protective clothing. Do not attempt to take action without suitable protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures	Ventilate spillage area. Avoid contact with skin and eyes. Avoid breathing vapours.

6.1.2. For emergency responders

Protective equipment	Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	Ventilate area.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Mechanically recover the product. Notify authorities if product enters sewers or public waters.
Other information	Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	Ensure good ventilation of the work station. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid contact with skin and eyes. Avoid breathing vapours.
Hygiene measures	Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	Store in a dry place. Store locked up. Store in a well-ventilated place.
Incompatible products	Strong bases. Strong acids.
Incompatible materials	Sources of ignition. Direct sunlight.
Storage temperature	35 – 104 °F

CFS-S SIL SL / CFS-S SIL GG

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

CFS-S SIL SL / CFS-S SIL GG	
No additional information available	
Methyltris(1-methylpropylideneaminoxysilane (22984-54-9)	
No additional information available	
Titanium dioxide (13463-67-7)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Titanium dioxide
ACGIH OEL TWA	0.2 mg/m ³ (Respirable fraction) 2.5 mg/m ³ (Respirable fraction)
Remark (ACGIH)	LRT irr; A3
Regulatory reference	ACGIH 2022
USA - OSHA - Occupational Exposure Limits	
Local name	Titanium dioxide (Total dust)
OSHA PEL TWA [1]	15 mg/m ³
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
octamethylcyclotetrasiloxane (556-67-2)	
No additional information available	

Additional information

The product has a pasty consistency. Exposure limit values for respirable dusts are not relevant for this product.

8.2. Appropriate engineering controls

Appropriate engineering controls

Ensure good ventilation of the work station.

Environmental exposure controls

Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Protective clothing. Safety glasses. Gloves.

Hand protection:				
protective gloves. EN 374				
Type	Material	Permeation	Thickness (mm)	Penetration
Disposable gloves	Nitrile rubber (NBR)	1 (> 10 minutes)	>0.4	
Eye protection:				
EN 166				
Type	Field of application		Characteristics	
Safety glasses				

CFS-S SIL SL / CFS-S SIL GG

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Skin and body protection:
Wear suitable protective clothing
Respiratory protection:
In case of inadequate ventilation wear respiratory protection.

Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Pasty.
Colour	red white
Odour	odourless
Odour threshold	Not determined
pH	8.5
Melting point	Not applicable
Freezing point	No data available
Boiling point	No data available
Flash point	412 °F
Relative evaporation rate (butylacetate=1)	No data available
Flammability (solid, gas)	Not applicable.
Vapour pressure	No data available
Relative vapour density at 20 °C	No data available
Relative density	No data available
Density	1.38 g/cm ³
Molecular mass	Not determined
Solubility	No data available
Partition coefficient n-octanol/water (Log Pow)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosive limits	No data available
Explosive properties	No data available
Oxidising properties	No data available

9.2. Other information

VOC content	< 50 g/l

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

CFS-S SIL SL / CFS-S SIL GG

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	Not classified
Acute toxicity (dermal)	Not classified
Acute toxicity (inhalation)	Not classified

Methyltris(1-methylpropylideneaminoxysilane (22984-54-9)	
LD50 oral rat	2463 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))

Titanium dioxide (13463-67-7)	
LD50 oral rat	> 2000 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LC50 Inhalation - Rat	> 5.09 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male, Experimental value, Inhalation (dust), 14 day(s))

octamethylcyclotetrasiloxane (556-67-2)	
LD50 oral rat	> 4800 mg/kg (Equivalent or similar to OECD 401, Rat, Male, Experimental value, Oral)
LD50 dermal rat	> 2400 mg/kg bodyweight (Equivalent or similar to OECD 402, Rat, Male / female, Experimental value, Dermal)
LC50 Inhalation - Rat	36 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (aerosol))

Skin corrosion/irritation	Not classified pH: 8.5
Serious eye damage/irritation	Not classified pH: 8.5
Respiratory or skin sensitisation	May cause an allergic skin reaction.
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified

Titanium dioxide (13463-67-7)	
IARC group	2B - Possibly carcinogenic to humans

CFS-S SIL SL / CFS-S SIL GG

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Reproductive toxicity	Suspected of damaging fertility or the unborn child.
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified
Aspiration hazard	Not classified
Viscosity, kinematic	No data available
Potential adverse human health effects and symptoms	Based on available data, the classification criteria are not met.
Symptoms/effects after inhalation	May cause an allergic skin reaction.
Symptoms/effects after skin contact	May cause an allergic skin reaction.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Ecology - water	Harmful to aquatic life with long lasting effects.

Methyltris(1-methylpropylideneaminoxysilane (22984-54-9)	
LC50 - Fish [1]	> 100 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oryzias latipes, Semi-static system, Fresh water, Read-across, GLP)
EC50 - Crustacea [1]	201 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Read-across, GLP)
ErC50 algae	16 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)
Titanium dioxide (13463-67-7)	
LC50 - Fish [1]	> 1000 mg/l (Pisces, Fresh water)
LC50 - Other aquatic organisms [1]	> 500 mg/l
EC50 - Crustacea [1]	> 1000 mg/l (Invertebrata, Fresh water)
EC50 72h - Algae [1]	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Growth rate)
ErC50 algae	61 mg/l (EPA 600/9-78-018, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Nominal concentration)

12.2. Persistence and degradability

CFS-S SIL SL / CFS-S SIL GG	
Persistence and degradability	May cause long-term adverse effects in the environment.
Methyltris(1-methylpropylideneaminoxysilane (22984-54-9)	
Persistence and degradability	Not readily biodegradable in water.
Titanium dioxide (13463-67-7)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

CFS-S SIL SL / CFS-S SIL GG

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

octamethylcyclotetrasiloxane (556-67-2)	
Persistence and degradability	Not readily biodegradable in water.

12.3. Bioaccumulative potential

CFS-S SIL SL / CFS-S SIL GG	
Bioaccumulative potential	Not established.

Methyltris(1-methylpropylideneaminoxysilane (22984-54-9)	
BCF - Fish [1]	0.5 – 5.8 (6 week(s), Cyprinus carpio, Flow-through system, Experimental value)
Partition coefficient n-octanol/water (Log Pow)	0.36 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

Titanium dioxide (13463-67-7)	
Bioaccumulative potential	Not bioaccumulative.

octamethylcyclotetrasiloxane (556-67-2)	
BCF - Fish [1]	12400 l/kg (EPA OTS 797.1520, 28 day(s), Pimephales promelas, Flow-through system, Fresh water, Experimental value, GLP)
Partition coefficient n-octanol/water (Log Pow)	6.488 (Experimental value, OECD 123: Partition Coefficient (1-Octanol/Water): Slow-Stirring Method, 25.1 °C)
Bioaccumulative potential	High potential for bioaccumulation (BCF > 5000).

12.4. Mobility in soil

Methyltris(1-methylpropylideneaminoxysilane (22984-54-9)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	5.481 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Adsorbs into the soil.

Titanium dioxide (13463-67-7)	
Surface tension	No data available in the literature
Ecology - soil	Low potential for mobility in soil.

octamethylcyclotetrasiloxane (556-67-2)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	4.22 (log Koc, OECD 106: Adsorption/Desorption Using a Batch Equilibrium Method, Experimental value, GLP)
Ecology - soil	Low potential for mobility in soil.

12.5. Other adverse effects

Other information	Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods	Dispose of contents/container in accordance with licensed collector's sorting instructions.

CFS-S SIL SL / CFS-S SIL GG

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Product/Packaging disposal recommendations

Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
Avoid release to the environment.

Ecology - waste materials

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / RID /

ADR	IMDG	IATA	RID
14.1. UN number			
Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name			
Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)			
Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary information available			

14.6. Special precautions for user

Overland transport

No data available

Transport by sea

No data available

Air transport

No data available

Rail transport

No data available

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Contains chemical(s) subject to TSCA 12b export notification if product is shipped outside the U.S

CFS-S SIL SL / CFS-S SIL GG

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

octamethylcyclotetrasiloxane	CAS-No. 556-67-2	0.1 – 1%

15.2. International regulations

Titanium dioxide (13463-67-7)

Listed on IARC (International Agency for Research on Cancer)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date

09/26/2022

Data sources

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information

None.

Full text of H-statements	
H226	Flammable liquid and vapour.
H227	Combustible liquid
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H413	May cause long lasting harmful effects to aquatic life.

NFPA health hazard

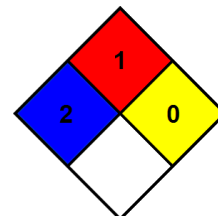
2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard

1 - Materials that must be preheated before ignition can occur.

NFPA reactivity

0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health

1 Slight Hazard - Irritation or minor reversible injury possible

Flammability

1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)

Physical

0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection

B - Safety glasses, Gloves



CFS-S SIL SL / CFS-S SIL GG

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Indication of changes:			
Section	Changed item	Change	Comments
			general update

SDS_US_Hilti

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision date : 2018-01-25
Publication date : 2018-08-28

Version number : 1.2

SECTION 1: Identification of the substance/mixture and of the company/undertaking

(a) Product identifier

SDS : 33602
Lamp Material Data Sheet code (LMDS) : Philips TL8-13100A

* Supplier : Signify North America Corporation
200 Franklin Square Drive
Somerset, NJ 08873-4186

Tradename : PHILIPS T8 FLUORESCENT LAMPS - ALL TYPES

(b) Other means of identification : All ALTO, non-ALTO, Standard, HO, Circular, U-Bent and TuffGuard
All lengths, coatings, wattages

(c) Relevant identified uses of the substance or mixture and uses advised against

General description : Fluorescent Lamp
Use : Various
Uses advised against : No data available

(d) Details of the supplier of the safety data sheet

Supplier safety data sheet : Philips Electronics Nederland B.V., Philips Environment & Safety, High
Tech Campus 37, 5656 AE Eindhoven, Tel. +31 (0)40 27 41 645
Responsible department : hazcom@philips.com

(e) Emergency telephone number

Emergency telephone number:
CHEMTREC : +1 (0)800-424-9300

SECTION 2: Hazards identification

(a) Classification of the substance or mixture

Classification in accordance with 29 CFR 1910.1200

Not classified.

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). This product is an article and as such does not require an SDS per the OSHA hazard communication standard.

(b) Label elements

Labelling in accordance with 29 CFR 1910.1200

Label : not applicable.
Remarks on labelling: none

(c) Other hazards

none.

SECTION 3: Composition/information on ingredients

Component	CAS number
GLASS	65997-17-3
FLUORESCENT POWDER	-
MERCURY	7439-97-6
POLY(ETHYLENE TEREPHTHALATE)	25038-59-9

Remark: The product contains: 1.7 - 3.5 mg Mercury

SECTION 4: First aid measures

(a) Description of first aid measures

Skin : Not applicable.
Ingestion : Not applicable.
Inhalation : Not applicable.
Eyes : Not applicable.

(b) Most important symptoms and effects, both acute and delayed

Skin	local	:	Under normal circumstances not applicable.
	general	:	Under normal circumstances not applicable
Ingestion	local	:	Under normal circumstances not applicable
	general	:	Under normal circumstances not applicable
Inhalation	local	:	Under normal circumstances not applicable
	general	:	Under normal circumstances not applicable
Eyes	local	:	Under normal circumstances not applicable
Remarks symptoms		:	None

(c) Indication of any immediate medical attention and special treatment needed

None

SECTION 5: Firefighting measures

(a) Extinguishing media

Suitable fire-extinguisher

determined by surrounding.

Unsuitable fire-extinguisher

not traceable.

(b) Special hazards arising from the substance or mixture

Hazardous decomposition products in fire: Silicon dioxide, Mercury oxides, metal oxide

(c) Advice for firefighters

In the event of fire, wear protective clothing and use breathing apparatus that is independent of the ambient air.

SECTION 6: Accidental release measures

(a) Personal precautions, protective equipment and emergency procedures

Personal precautions

In case of broken articles, use protective equipment. Evacuate area.

For non-emergency personnel

Protective equipment

Wear protective gloves/protective clothing/eye protection/face protection.

Emergency procedure

Ventilate affected area.

For emergency responders

Use appropriate respiratory protection. Personal protection equipment

(b) Methods and material for containment and cleaning up

For containment

Collect materials needed to clean up broken bulb: stiff paper or cardboard; sticky tape; damp paper towels or disposable wet wipes (for hard surfaces); and a glass jar with a metal lid or a sealable plastic bag. Be thorough in collecting broken glass.

For cleaning up

DO NOT VACUUM. Vacuuming is not recommended unless broken glass remains after all other cleanup steps have been taken. Vacuuming could spread mercury-containing powder or mercury vapor. Scoop up glass fragments using stiff paper or cardboard and sticky tape. Place cleanup materials in a sealable container.

Other information

No information available.

SECTION 7: Handling and storage

(a) Precautions for safe handling

Local exhausting : Under normal circumstances not applicable.

(b) Conditions for safe storage, including any incompatibilities

Storage conditions : No special precautions.

SECTION 8: Exposure controls/personal protection

(a) Control parameters

Exposure limits :

applicable to: United States of America (25 °C; 1013 mbar)

TWA(8 hours):	0.025 mg/m ³	S	MERCURY- [according to ACGIH]
TWA (8 hours):	0.1 mg/m ³	C	MERCURY- [according to NIOSH]
TWA (8 hours)	0.1 mg/10m ³	C	MERCURY – [according to OSHA PEL]

C=Ceiling; S=Skin

Remarks exposure limits : none

(b) **Appropriate engineering controls:** Under normal circumstances not applicable

(c) **Exposure controls**

Advised personal protection:

Hands:	Under normal circumstances not applicable.
Breakthrough time:	Under normal circumstances not applicable.
Eyes:	Under normal circumstances not applicable.
Inhalation:	Under normal circumstances not applicable.
Skin:	Under normal circumstances not applicable.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	:	article		
Color	:	type dependent		
Odor	:	odorless		
Odor threshold (20°C; 1013 mbar)	:	not traceable		
pH	:	not applicable		
Melting point/freezing point	:	not traceable		
Boiling point/range	:	not traceable		
Flash point/range	:	not applicable		
Evaporation rate/range	:	not applicable		
Vapor rate/range	:	not applicable		
Flammability (solid, gas)	:	data not available		
Upper/lower flammability or explosive limit	:	not applicable		
Vapor pressure	:	not applicable		
Vapor density	:	not applicable		
Density	:	not traceable		
Solubility in water	:	not applicable		
Log Po/w:	4.5	MERCURY	Source	: Chemicalcards
	0.54	POLY(ETHYLENE TEREPHTHALATE)	Source	: Easi View
Auto-ignition temperature	:	not applicable		
Decomposition temperature	:	not traceable		
Viscosity	:	not applicable		
Dust explosions possible in air	:	not applicable		
Oxidizing properties	:	no		

SECTION 10: Stability and reactivity

(a) **Reactivity**

Not applicable.

(b) **Chemical stability**

The substance or mixture is stable under normal conditions.

(c) **Possibility of hazardous reactions**

Reactions with water	:	no
Other hazardous conditions	:	Data not available.

(d) **Conditions to avoid**

Data not available.

(e) **Incompatible materials**

Hazardous reactions with	:	none

(f) **Hazardous decomposition products**

Hazardous decomposition products at heating : none

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity

No data available.

Acute dermal toxicity

No data available.

Acute inhalation toxicity

No data available.

Skin corrosion/irritation

The substance or mixture is not classified for skin corrosion/-irritation.

Serious eye damage/irritation

The substance or mixture is not classified for serious eye damage/irritation.

Respiratory or skin sensitization

The substance or mixture is not classified for respiratory or skin sensitization.

Germ cell mutagenicity

The substance or mixture is not classified for germ cell mutagenicity.

Carcinogenicity

IARC: Group 3: Not classifiable as to its carcinogenicity to humans (Mercury)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

The substance or mixture is not classified for reproductive toxicity.

Specific target organ toxicity-single exposure

The substance or mixture is not classified for specific target organ toxicity-single exposure.

Specific target organ toxicity-repeated exposure

The substance or mixture is not classified for specific target organ toxicity-repeated exposure.

Aspiration hazard

The substance or mixture is not classified for aspiration hazard.

Symptoms

Skin	local	:	Not applicable.
	general	:	Not applicable.
Ingestion	local	:	Not applicable.
	general	:	Not applicable.
Inhalation	local	:	Not applicable.
	general	:	Not applicable.
Eyes	local	:	Not applicable.
Remarks symptoms		:	None

SECTION 12: Ecological information

(a) Toxicity

Ecotoxicity

LC-50: 0.004 mg/l/96H (Fish)	MERCURY	Source	: Easi View
EC-50: 0.0205 mg/l/48H (Daphnia)	MERCURY	Source	: IFA- Gestis
IC-50: 0.3 mg/l/72H (Algae)	MERCURY	Source	: Easi View

(b) Persistence and degradability

Biological oxygen demand:	not applicable
Chemical oxygen demand:	not applicable
Degradability:	not applicable

(c) Bioaccumulative potential

Bioconcentration factor (BCF)	: >2500	MERCURY

(d) Mobility in soil

Henry Constant	: 1.46E-1 atm m3/mol	POLY(ETHYLENE TEREPHTHALATE)	Source:	Easi View

(e) Other adverse effects

Remarks on eco-toxicity:	none

SECTION 13: Disposal considerations

Waste treatment methods

Remainder material or uncleaned empty packaging's have to be incinerated in a proper installation or dumped on an approved landfill, in accordance with local and national legislation.

SECTION 14: Transport information

(a) UN number

DOT/49CFR	: none
IMDG/IMO	: none
IATA/ICAO	: 3506
Remarks IATA/ICAO	: For transport exemptions consult IATA special provisions A48, A69 and A191.

(b) UN proper shipping name

DOT/49CFR	: none
IMDG/IMO	: none
IATA/ICAO	: MERCURY CONTAINED IN MANUFACTURED ARTICLES

(c) Transport hazard class(es)

DOT/49CFR : none	IMDG/IMO : none	IATA/ICAO : 8 (6.1)

(d) Packing group

DOT/49CFR : none	IMDG/IMO : none	IATA/ICAO : none

(e) Environmental hazards

Marine pollutant	: no

(f) Special precautions for user

Hazard identification number (ADR/RID)	: none

EmS (IMDG/IMO) : none

(g) Transport in bulk according to Annex II of Marpol and the IBC Code

Data not available.

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

US Federal regulations

SARA 313: Mercury

SARA 311/312: not applicable.

HMIS Classification: not applicable.

U.S. Clean Water Act Section 307 – Toxic Pollutants: Mercury

National inventories

Articles are exempted from the Toxic Substances Control Act Inventory (TSCA-USA).

International inventories

DSL/NDL: This substance is on the DSL (Mercury)

SECTION 16: Other information

Remarks on SDS : Working on this product may release toxic dust.
Toxic mercury vapors can be released if the lamp is broken.
For transport exemptions consult applicable regulations.

A key or legend to abbreviations and acronyms used in the safety data sheet

GHS	Globally Harmonized System of Classification and Labelling of Chemicals
CAS	Chemical Abstracts Service
TGG = TWA	Time Weighted Average
LEL	Lower Explosive Limit
UEL	Upper Explosive Limit
NTP	National Toxicology Program
KHC	Known Human Carcinogen
RAHC	Reasonably Anticipated Human Carcinogen
IARC	International Agency for Research on Cancer
OSHA	Occupational Safety & Health Administration
DOT	US Department of Transportation
RID	Règlement concernant le transport international ferroviaire des marchandises dangereuses
UN	United Nations
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
EmS	Emergency Schedule
SARA	Superfund Amendments and Reauthorization Act

* Point to alterations with regard to the previous version.

The information provided in this Safety Data Sheet is believed to be correct as of the date issued. Philips Electronics Nederland B.V. makes no warranty as to its contents, nor as to its fitness for any particular purpose or use.



SAFETY DATA SHEET

DDP SPECIALTY ELECTRONIC MATERIALS US 9, LLC

Product name: GREAT STUFF PRO™ Gasket Foam

Issue Date: 03/14/2024

Print Date: 03/21/2024

DDP SPECIALTY ELECTRONIC MATERIALS US 9, LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: GREAT STUFF PRO™ Gasket Foam

Recommended use of the chemical and restrictions on use

Identified uses: For industrial use. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

COMPANY IDENTIFICATION

DDP SPECIALTY ELECTRONIC MATERIALS
US 9, LLC
974 Centre Road
Wilmington DE 19805
UNITED STATES

Customer Information Number:

833-338-7668
SDSQuestion-NA@dupont.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 1-800-424-9300

Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification

GHS classification in accordance with 29 CFR 1910.1200

Flammable aerosols - Category 2

Gases under pressure - Liquefied gas

Label elements

Hazard pictograms



Signal word: **WARNING!**

Hazards

Flammable aerosol.

Contains gas under pressure; may explode if heated.

Precautionary statements**Prevention**

Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.

Do not spray on an open flame or other ignition source.

Pressurized container: Do not pierce or burn, even after use.

Storage

Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

Other hazards

No data available

Further information

The values listed below represent the percentages of ingredients of unknown toxicity.

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 36.1913 %

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Water	7732-18-5	<= 60.0 %
Polyurethane Resin	Not available	<= 40.0 %
Ethanol	64-17-5	<= 5.0 %
Isobutane	75-28-5	<= 3.0 %
Dimethyl ether	115-10-6	<= 2.0 %
Ammonia	7664-41-7	< 1.0 %
Ethoxylated octylphenol	9002-93-1	< 1.0 %

4. FIRST AID MEASURES

Description of first aid measures**General advice:**

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.

Eye contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms and effects, both acute and delayed:

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Maintain adequate ventilation and oxygenation of the patient. Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs such as epinephrine unless absolutely necessary. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Skin contact may aggravate preexisting dermatitis.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. Straight or direct water streams may not be effective to extinguish fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture

Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Container may vent and/or rupture due to fire. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. When product is stored in closed containers, a flammable atmosphere can develop. Flammable mixtures may exist within the vapor space of containers at room temperature. Flammable concentrations of vapor can accumulate at temperatures above flash point; see Section 9.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Water may not be effective in extinguishing fire. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. For large spills, warn public of downwind explosion hazard. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Vapor explosion hazard. Keep out of sewers. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Pump with explosion-proof equipment. If available, use foam to smother or suppress. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep away from heat, sparks and flame. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Never use air pressure for transferring product. Avoid contact with eyes. Avoid breathing vapor. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Minimize sources of ignition, such as static build-up, heat, spark or flame. Keep container closed when not in use. Flammable mixtures may exist within the vapor space of containers at room temperature. Store in a dry place. Flammable vapors may accumulate in some storage situations. Avoid moisture. Avoid contact with air (oxygen). Store in accordance with good manufacturing practices.

Storage stability

Storage temperature:

32 °C (90 °F)

Storage Period:

12 Month

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value
Ethanol	DUPONT AEL	AEL *	1,000 ppm
	ACGIH	TWA	1,000 ppm
	Further information: URT irr: Upper Respiratory Tract irritation		
	ACGIH	STEL	1,000 ppm
	Further information: URT irr: Upper Respiratory Tract irritation		
	OSHA Z-1	TWA	1,900 mg/m3 1,000 ppm
	CAL PEL	PEL	1,900 mg/m3 1,000 ppm
	NIOSH REL	TWA	1,900 mg/m3 1,000 ppm
Isobutane	ACGIH	STEL	1,000 ppm
	NIOSH REL	TWA	1,900 mg/m3 800 ppm
Dimethyl ether	US WEEL	TWA	1,000 ppm
Ammonia	DUPONT AEL	AEL *	25 ppm
	DUPONT AEL	STEL	35 ppm
	OSHA Z-1	TWA	35 mg/m3 50 ppm
	ACGIH	TWA	25 ppm, Ammonia
	ACGIH	STEL	35 ppm, Ammonia
	CAL PEL	PEL	18 mg/m3 25 ppm
	CAL PEL	STEL	27 mg/m3 35 ppm
	OSHA P0	STEL	27 mg/m3 35 ppm
	NIOSH REL	TWA	18 mg/m3 25 ppm, Ammonia
	NIOSH REL	ST	27 mg/m3 35 ppm, Ammonia

Exposure controls

Engineering measures: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only in enclosed systems or with local exhaust ventilation. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. Lethal concentrations may exist in areas with poor ventilation.

Individual protection measures

Eye/face protection: Use chemical goggles.

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Neoprene. Avoid gloves made of: Polyvinyl alcohol ("PVA"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. When respiratory protection is required, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	Aerosol containing a compressed gas
Color	white
Odor	Ammonia odor
Odor Threshold	No test data available
pH	10 - 10.9
Melting point/range	No test data available
Freezing point	No test data available
Boiling point (760 mmHg)	No test data available
Flash point	closed cup -104 °C (-155 °F) <i>Estimated.</i>
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	Not expected to form explosive dust-air mixtures.
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	Not applicable to liquids
Relative Density (water = 1)	Not applicable
Water solubility	Not applicable
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available

Kinematic Viscosity	not determined
Explosive properties	Not explosive
Oxidizing properties	No
Molecular weight	No test data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.
Hygroscopic

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Avoid contact with air (oxygen). Exposure to elevated temperatures can cause product to decompose. Avoid moisture.

Incompatible materials: Avoid contact with: Bases. Oxidizers. Peroxides. Phosphorous compounds. Reducing agents. Avoid contact with metals such as: Alkali metals.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon monoxide. Carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity

Product test data not available. Refer to component data.

Acute dermal toxicity

Product test data not available. Refer to component data.

Acute inhalation toxicity

Product test data not available. Refer to component data.

Skin corrosion/irritation

Product test data not available. Refer to component data.

Serious eye damage/eye irritation

Product test data not available. Refer to component data.

Sensitization

Product test data not available. Refer to component data.

Specific Target Organ Systemic Toxicity (Single Exposure)

Product test data not available. Refer to component data.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Product test data not available. Refer to component data.

Carcinogenicity

Product test data not available. Refer to component data.

Teratogenicity

Product test data not available. Refer to component data.

Reproductive toxicity

Product test data not available. Refer to component data.

Mutagenicity

Product test data not available. Refer to component data.

Aspiration Hazard

Product test data not available. Refer to component data.

COMPONENTS INFLUENCING TOXICOLOGY:

Polyurethane Resin

Acute oral toxicity

LD50, Rat, > 5,000 mg/kg Estimated.

Acute dermal toxicity

The dermal LD50 has not been determined.

Acute inhalation toxicity

The LC50 has not been determined.

Skin corrosion/irritation

Essentially nonirritating to skin.

Mechanical injury only.

Under normal processing conditions, material is heated to elevated temperatures; contact with the material may cause thermal burns.

For the major component(s):

Serious eye damage/eye irritation

Solid or dust may cause irritation due to mechanical action.

Elevated temperatures may generate vapor levels sufficient to cause eye irritation. Effects may include discomfort and redness.

Sensitization

No relevant data found.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Available data are inadequate to determine single exposure specific target organ toxicity.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

No relevant data found.

Carcinogenicity

No relevant data found.

Teratogenicity

No relevant data found.

Reproductive toxicity

No relevant data found.

Mutagenicity

No relevant data found.

Aspiration Hazard

Based on available information, aspiration hazard could not be determined.

Ethanol

Acute oral toxicity

LD50, Rat, > 7,000 mg/kg

LDLo, human, 1,400 mg/kg

Acute dermal toxicity

LD50, Rabbit, > 15,800 mg/kg

Acute inhalation toxicity

LC50, Rat, 4 Hour, vapour, 124.7 mg/l

Skin corrosion/irritation

Essentially nonirritating to skin.

May cause drying and flaking of the skin.

Serious eye damage/eye irritation

May cause moderate eye irritation.

May cause moderate corneal injury.

Sensitization

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No data available.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

No specific, relevant data available for assessment.

Carcinogenicity

Ethanol when not consumed in an alcoholic beverage is not classifiable as a human carcinogen. Epidemiology studies provide evidence that drinking of alcoholic beverages (containing ethanol) is associated with cancer, and IARC has classified alcoholic beverages as carcinogenic to humans.

Teratogenicity

Has caused birth defects in lab animals at high doses.

Reproductive toxicity

No specific, relevant data available for assessment.

Mutagenicity

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative in some cases and positive in other cases.

Aspiration Hazard

May be harmful if swallowed and enters airways.

Isobutane**Acute oral toxicity**

Single dose oral LD50 has not been determined.

Acute dermal toxicity

The dermal LD50 has not been determined.

Acute inhalation toxicity

LC50, Mouse, 4 Hour, gas, 260,200 mg/l

Skin corrosion/irritation

Liquid may cause frostbite upon skin contact.

No hazard from gas.

Serious eye damage/eye irritation

Liquid may cause frostbite.

Vapor may cause eye irritation experienced as mild discomfort and redness.

Sensitization

For skin sensitization:

No relevant data found.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

May cause drowsiness or dizziness.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Carcinogenicity

No relevant data found.

Teratogenicity

No relevant data found.

Reproductive toxicity

No relevant data found.

Mutagenicity

In vitro genetic toxicity studies were negative.

Aspiration Hazard

Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.

Dimethyl ether

Acute oral toxicity

Single dose oral LD50 has not been determined.

Acute dermal toxicity

The dermal LD50 has not been determined.

Acute inhalation toxicity

LC50, Rat, 4 Hour, gas, 164000 ppm

Skin corrosion/irritation

Liquid may cause frostbite upon skin contact.

Prolonged or repeated exposure may cause defatting of the skin leading to drying or flaking of skin.

Serious eye damage/eye irritation

Liquid may cause frostbite.

Sensitization

No relevant information found.

For respiratory sensitization:

No relevant information found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Available data are inadequate to determine single exposure specific target organ toxicity.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

In animals, effects have been reported on the following organs:

Kidney.

Liver.

Carcinogenicity

Did not cause cancer in laboratory animals.

Teratogenicity

Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

Reproductive toxicity

No relevant data found.

Mutagenicity

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard

Based on available information, aspiration hazard could not be determined.

Ammonia**Acute oral toxicity**

Single dose oral LD50 has not been determined.

Acute dermal toxicity

The dermal LD50 has not been determined.

Acute inhalation toxicity

Central nervous system effects. Respiratory effects. LC50, Mouse, 4 Hour, gas, 2115 ppm

Skin corrosion/irritation

Brief contact may cause skin burns. Symptoms may include pain, severe local redness and tissue damage.

Serious eye damage/eye irritation

May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Sensitization

For skin sensitization:

No data available

For respiratory sensitization:

No data available

Specific Target Organ Systemic Toxicity (Single Exposure)

May cause respiratory irritation.

Target Organs: Respiratory system

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Information given is based on data obtained from similar substances.

Carcinogenicity

Animal testing did not show any carcinogenic effects. For similar material(s):

Teratogenicity

Did not cause birth defects or any other fetal effects in laboratory animals. Information given is based on data obtained from similar substances.

Reproductive toxicity

In animal studies, did not interfere with reproduction. Information given is based on data obtained from similar substances.

Mutagenicity

This material was not mutagenic in an Ames bacterial assay. Animal genetic toxicity studies were negative.

Aspiration Hazard

No aspiration toxicity classification

Ethoxylated octylphenol**Acute oral toxicity**

LD50, Rat, 1,800 mg/kg

Acute dermal toxicity

LD50, Rabbit, 8,000 mg/kg

Acute inhalation toxicity

The LC50 has not been determined.

Skin corrosion/irritation

Prolonged contact may cause slight skin irritation with local redness.

Serious eye damage/eye irritation

May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Sensitization

Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

No data available

Specific Target Organ Systemic Toxicity (Repeated Exposure)

No relevant data found.

Carcinogenicity

No data available.

Teratogenicity

No relevant data found.

Reproductive toxicity

No relevant data found.

Mutagenicity

No relevant data found.

Aspiration Hazard

Based on available information, aspiration hazard could not be determined.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity**Polyurethane Resin****Acute toxicity to fish**

Not expected to be acutely toxic, but material in pellet or bead form may mechanically cause adverse effects if ingested by waterfowl or aquatic life.

Ethanol**Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Oncorhynchus mykiss (rainbow trout), flow-through test, 96 Hour, 11,200 - 13,000 mg/l

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), 48 Hour, 5,414 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

Ec50, Skeletonema costatum (marine diatom), 5 d, Biomass, 10,943 - 11,619 mg/l, OECD Test Guideline 201 or Equivalent

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), 9 d, 9.6 mg/l

Isobutane**Acute toxicity to fish**

No relevant data found.

Dimethyl ether**Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Poecilia reticulata (guppy), semi-static test, 96 Hour, > 4,000 mg/l

Acute toxicity to aquatic invertebrates

LC50, Daphnia magna (Water flea), 48 Hour, > 4,000 mg/l, OECD Test Guideline 202 or Equivalent

Toxicity to bacteria

EC10, Pseudomonas putida, > 1,600 mg/l

Ammonia**Acute toxicity to fish**

Information given is based on data obtained from similar substances.
LC50, Pimephales promelas (fathead minnow), 96 Hour, 0.75 - 3.4 mg/l

Acute toxicity to aquatic invertebrates

LC50, Daphnia magna (Water flea), 48 Hour, 101 mg/l

Acute toxicity to algae/aquatic plants

Information given is based on data obtained from similar substances.
EC50, Chlorella vulgaris (Fresh water algae), 18 d, 2,700 mg/l

Chronic toxicity to fish

NOEC, Ictalurus punctatus (channel catfish), 31 d, 0.048 mg/l

Chronic toxicity to aquatic invertebrates

Information given is based on tests on the mixture itself.

Daphnia magna (Water flea), 21 d, 0.79 mg/l

Ethoxylated octylphenol**Acute toxicity to fish**

LC50, Leuciscus idus (Golden orfe), 96 Hour, 0.26 mg/l

Acute toxicity to aquatic invertebrates

EC50, No species specified, 48 Hour, 0.013 mg/l

Acute toxicity to algae/aquatic plants

EC50, Pseudokirchneriella subcapitata (green algae), 96 Hour, 1.9 mg/l

NOEC, Pseudokirchneriella subcapitata (green algae), 96 Hour, < 1 mg/l

Chronic toxicity to fish

NOEC, Danio rerio (zebra fish), 151 d, 0.012 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), 21 d, 0.03 mg/l

Persistence and degradability**Polyurethane Resin**

Biodegradability: This water-insoluble polymeric solid is expected to be inert in the environment. Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

Ethanol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Pass

Biodegradation: > 70 %

Exposure time: 5 d

Method: OECD Test Guideline 301D or Equivalent

Theoretical Oxygen Demand: 2.08 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals

Atmospheric half-life: 2.99 d

Method: Estimated.

Isobutane

Biodegradability: Biodegradation may occur under aerobic conditions (in the presence of oxygen).

Theoretical Oxygen Demand: 3.58 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals

Atmospheric half-life: 4.4 d

Method: Estimated.

Dimethyl ether

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

10-day Window: Fail

Biodegradation: 5 %

Exposure time: 28 d

Method: OECD Test Guideline 301A or Equivalent

Ammonia

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Theoretical Oxygen Demand: 3.76 mg/mg Estimated.

Ethoxylated octylphenol

Biodegradability: Inherently biodegradable.

Method: OECD Test Guideline 301B

Bioaccumulative potential

Polyurethane Resin

Bioaccumulation: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

Ethanol

Bioaccumulation: Bioaccumulation is unlikely. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): -0.31 Measured

Isobutane

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 2.76 Measured

Dimethyl ether

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 0.10 Measured

Ammonia

Bioaccumulation: Does not bioaccumulate.

Partition coefficient: n-octanol/water(log Pow): 0.23 at 20 °C

Ethoxylated octylphenol

Bioaccumulation: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water(log Pow): 4.8

Mobility in soil

Polyurethane Resin

In the terrestrial environment, material is expected to remain in the soil.

In the aquatic environment, material will sink and remain in the sediment.

Ethanol

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): 1.0 Estimated.

Isobutane

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): 35 Estimated.

Dimethyl ether

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): 1.29 - 14 Estimated.

Ammonia

No specific, relevant data available for assessment.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Aerosols
UN number	UN 1950
Class	2.1
Packing group	
Reportable Quantity	Ammonia

Classification for SEA transport (IMO-IMDG):

Proper shipping name	AEROSOLS
UN number	UN 1950
Class	2.1
Packing group	
Marine pollutant	No
Transport in bulk according to Annex I or II	Consult IMO regulations before transporting ocean bulk

of MARPOL 73/78 and the
IBC or IGC Code

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Aerosols, flammable
UN number	UN 1950
Class	2.1
Packing group	

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Flammable (gases, aerosols, liquids, or solids)

Gases under pressure

Serious eye damage or eye irritation

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

Calculated RQ exceeds reasonably attainable upper limit.

Components	CASRN	RQ (RCRA Code)
Methanol	67-56-1	5000 lbs RQ
Methanol	67-56-1	100 lbs RQ (F003)
Ammonia	7664-41-7	100 lbs RQ

Does not contain HFC.

Compliant with Title 42 Chapter 85 Clean Air Act: Subchapter VII American Innovation and Manufacturing Act of 2020, and Section 612 US EPA Significant New Alternatives Policy.

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Pennsylvania Worker and Community Right-To-Know Act:

The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components

Ethanol
Isobutane
Dimethyl ether

CASRN

64-17-5
75-28-5
115-10-6

California Prop. 65

This product contains a chemical that is at or below California Propositions 65's "safe harbor level" as determined via a risk assessment. Therefore, the chemical is not required to be listed as a Prop 65 chemical on the SDS or label.

United States TSCA Inventory (TSCA)

All components of this product are in compliance with the Active inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Hazard Rating System**HMIS**

Health	Flammability	Physical Hazard
2/	4	3

Revision

Identification Number: 12011680 / A776 / Issue Date: 03/14/2024 / Version: 5.1

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
AEL *	8 & 12 hr. TWA
CAL PEL	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
DUPONT AEL	DuPont AEL (Acceptable Exposure Limit)
NIOSH REL	USA. NIOSH Recommended Exposure Limits
OSHA P0	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
PEL	Permissible exposure limit
ST	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
STEL	Short-term exposure limit
TWA	8-hr TWA
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic

Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DDP SPECIALTY ELECTRONIC MATERIALS US 9, LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

US

**Diesel Reference Fuel U-32**

Version 1.15

Revision Date 2021-03-08

according to GB/T 16483 and GB/T 17519

SECTION 1: Identification of the substance/mixture and of the company/undertaking**Product information**

Product Name : Diesel Reference Fuel U-32
Material : 1108915, 1024281, 1024280, 1032195, 1024277, 1024279,
1024278

Use : Reference Fuel

Company : Chevron Phillips Chemical Company LP
Specialty Chemicals
10001 Six Pines Drive
The Woodlands, TX 77380

Local : Chevron Phillips Chemicals (Shanghai) Corporation
Room 1810-1812, Shanghai Mart,
2299 Yan An Road (W),
Shanghai, PRC 200336
Tel: (86-21) 22157200

Emergency telephone:**Health:**

866.442.9628 (North America)

1.832.813.4984 (International)

Transport:

CHEMTREC 800.424.9300 or 703.527.3887(int'l)

Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090

EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

Mexico CHEMTREC 01-800-681-9531 (24 hours)

South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Argentina: +(54)-1159839431

Responsible Department : Product Safety and Toxicology Group

E-mail address : SDS@CPChem.com

Website : www.CPChem.com

SECTION 2: Hazards identification**Classification of the substance or mixture**

GHS Classification and Labeling: Follow GB 13690, GB 15258 and GB 30000.2 to GB 30000.29 (GHS 2011)

Diesel Reference Fuel U-32

Version 1.15

Revision Date 2021-03-08

Emergency Overview**Danger****Physical state:** liquid **Color:** Yellow **Odor:** Mild**Hazards**

: Flammable liquid and vapor. Causes skin irritation. May cause cancer. May cause damage to organs through prolonged or repeated exposure. May be fatal if swallowed and enters airways. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Classification

: Flammable liquids, Category 3
 Skin corrosion/irritation, Category 2
 Carcinogenicity, Category 1B
 Specific target organ toxicity - repeated exposure, Category 2, Blood, Liver, thymus gland
 Aspiration hazard, Category 1
 Short-term (acute) aquatic hazard, Category 1
 Long-term (chronic) aquatic hazard, Category 1

Labeling**Symbol(s)****Signal Word**

: Danger

Hazard Statements

: H226: Flammable liquid and vapor.
 H304: May be fatal if swallowed and enters airways.
 H315: Causes skin irritation.
 H350: May cause cancer.
 H373: May cause damage to organs (Blood, Liver, thymus gland) through prolonged or repeated exposure.
 H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statements

: **Prevention:**
 P201: Obtain special instructions before use.
 P202: Do not handle until all safety precautions have been read and understood.
 P210: Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
 P233: Keep container tightly closed.
 P240: Ground/bond container and receiving equipment.
 P241: Use explosion-proof electrical/ ventilating/ lighting/ equipment.
 P242: Use only non-sparking tools.
 P243: Take precautionary measures against static discharge.
 P260: Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
 P264: Wash skin thoroughly after handling.
 P273: Avoid release to the environment.
 P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
 P301+P310: IF SWALLOWED: Immediately call a POISON

Diesel Reference Fuel U-32

Version 1.15

Revision Date 2021-03-08

CENTER/doctor.

P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P308 + P313: IF exposed or concerned: Get medical advice/attention.

P331: Do NOT induce vomiting.

P332 + P313: If skin irritation occurs: Get medical advice/attention.

P362+P364: Take off contaminated clothing and wash it before reuse.

P370+P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

P391: Collect spillage.

Storage:

P403 + P235: Store in a well-ventilated place. Keep cool.

P405: Store locked up.

Disposal:

P501: Dispose of contents/ container to an approved waste disposal plant.

SECTION 3: Composition/information on ingredients

Synonyms : Diesel Reference Fuel U

Molecular formula : Mixture

Chemical name	CAS-No. / EINECS-No.	Concentration [wt%]
Light Cycle Oil	64741-59-9	60 - 70
C12-C14 Isoalkanes	68551-19-9	30 - 40

SECTION 4: First aid measures

General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.

If inhaled : If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

In case of skin contact : If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact : Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

Diesel Reference Fuel U-32

Version 1.15

Revision Date 2021-03-08

SECTION 5: Firefighting measures

Flash point	: 48°C (118°F) Method: Tag closed cup
Autoignition temperature	: No data available
Suitable extinguishing media	: Alcohol-resistant foam. Carbon dioxide (CO ₂). Dry chemical.
Unsuitable extinguishing media	: High volume water jet.
Specific hazards during fire fighting	: Do not allow run-off from fire fighting to enter drains or water courses.
Special protective equipment for fire-fighters	: Wear self-contained breathing apparatus for firefighting if necessary.
Further information	: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
Fire and explosion protection	: Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from open flames, hot surfaces and sources of ignition.
Hazardous decomposition products	: Carbon oxides.

SECTION 6: Accidental release measures

Personal precautions	: Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Environmental precautions	: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods for cleaning up	: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SECTION 7: Handling and storage**Handling**

Diesel Reference Fuel U-32

Version 1.15

Revision Date 2021-03-08

Advice on safe handling : Avoid formation of aerosol. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from open flames, hot surfaces and sources of ignition.

Storage

Requirements for storage areas and containers : No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

Use : Reference Fuel

SECTION 8: Exposure controls/personal protection**Ingredients with workplace control parameters****Chevron Phillips Chemical Company LP**

Components	Basis	Value	Control parameters	Note
C12-C14 Isoalkanes	Manufacturer	TWA	1,200 mg/m3	RCP,

RCP Reciprocal Calculation Procedure

CN

Components	Basis	Value	Control parameters	Note

Not applicable

Engineering measures

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection : Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as: Air-Purifying Respirator for Organic Vapors. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-

Diesel Reference Fuel U-32

Version 1.15

Revision Date 2021-03-08

purifying respirators may not provide adequate protection.

- Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.
- Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate: Flame retardant antistatic protective clothing. Workers should wear antistatic footwear.
- Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties****Appearance**

- Physical state : liquid
- Color : Yellow
- Odor : Mild

Safety data

- Flash point : 48°C (118°F)
Method: Tag closed cup
- Lower explosion limit : No data available
- Upper explosion limit : No data available
- Oxidizing properties : No
- Autoignition temperature : No data available
- Thermal decomposition : No data available
- Molecular formula : Mixture
- Molecular weight : Not applicable
- pH : Not applicable
- Pour point : No data available
- Boiling point/boiling range : 176-317°C (349-603°F)

Diesel Reference Fuel U-32

Version 1.15

Revision Date 2021-03-08

Vapor pressure	: No data available
Relative density	: 0.869 at 15.6 °C (60.1 °F)
Density	: 0.8690 g/cm ³
Bulk density	: 7.25 L/G
Water solubility	: negligible
Partition coefficient: n-octanol/water	: No data available
Viscosity, kinematic	: 1.898 cSt at 40°C (104°F)
Relative vapor density	: 3 (Air = 1.0)
Evaporation rate	: < 1
Percent volatile	: > 99 %

SECTION 10: Stability and reactivity

Reactivity : Stable under recommended storage conditions.

Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Hazardous reactions : Hazardous reactions: Hazardous polymerization does not occur.

Further information: No decomposition if stored and applied as directed.

Hazardous reactions: Vapors may form explosive mixture with air.

Conditions to avoid : Heat, flames and sparks.

Materials to avoid : May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Thermal decomposition : No data available

Hazardous decomposition products : Carbon oxides

Diesel Reference Fuel U-32

Version 1.15

Revision Date 2021-03-08

Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information**Diesel Reference Fuel U-32**

Acute oral toxicity : LD50: > 5,000 mg/kg
Species: Rat
Method: Acute toxicity estimate

Diesel Reference Fuel U-32

Acute inhalation toxicity : LC50: > 20 mg/l
Exposure time: 4 h
Species: Rat
Test atmosphere: dust/mist
Method: Acute toxicity estimate

Diesel Reference Fuel U-32

Acute dermal toxicity : LD50: > 5,000 mg/kg
Species: Rabbit
Method: Acute toxicity estimate

Diesel Reference Fuel U-32

Skin irritation : Skin irritation
largely based on animal evidence.

Diesel Reference Fuel U-32

Eye irritation : May irritate eyes.

Diesel Reference Fuel U-32

Sensitization : Does not cause sensitization.

Repeated dose toxicity

Light Cycle Oil : Species: Rat, males
Sex: males
Application Route: Dermal
Dose: 0, 8, 25, 125, 500, 1250 mg/kg
Exposure time: 90 day
Number of exposures: 5 days/wk
NOEL: 25 mg/kg
Target Organs: Blood, Liver, Thymus

Species: Rat, females
Sex: females
Application Route: Dermal
Dose: 0, 8, 25, 125, 500, 1250 mg/kg
Exposure time: 90 day
Number of exposures: 5 days/wk
NOEL: 125 mg/kg
Target Organs: Blood, Liver, Thymus

C12-C14 Isoalkanes

Species: Rat, male and female
Sex: male and female
Application Route: oral gavage
Dose: 500, 2500, 5000 mg/kg/d

Diesel Reference Fuel U-32

Version 1.15

Revision Date 2021-03-08

Exposure time: 13 wk
 Number of exposures: daily
 NOEL: ≥ 5000 mg/kg/d
 Method: OECD Test Guideline 408
 No adverse effects expected
 Information given is based on data obtained from similar substances.

Species: Rat, male and female
 Sex: male and female
 Application Route: Dermal
 Dose: 165, 330, 495 mg/kg
 Exposure time: 13 wk
 Number of exposures: 5 d/wk
 NOEL: > 495 mg/kg/d
 Method: OECD Guideline 411
 No adverse effects expected
 Information given is based on data obtained from similar substances.

Species: Rat, male and female
 Sex: male and female
 Application Route: Inhalation
 Dose: 5, 10, 30 mg/L
 Exposure time: 90 d
 Number of exposures: 6 h/d
 NOEL: > 30 mg/l
 Method: OECD Test Guideline 413
 No adverse effects expected
 Information given is based on data obtained from similar substances.

Genotoxicity in vitro

Light Cycle Oil

: Test Type: Modified Ames test
 Result: positive

Test Type: Mouse lymphoma assay
 Result: positive

Test Type: Sister Chromatid Exchange Assay
 Result: negative

C12-C14 Isoalkanes

Test Type: Ames test
 Metabolic activation: with and without metabolic activation
 Result: negative

Test Type: Mouse lymphoma assay
 Metabolic activation: with and without metabolic activation
 Result: negative

Test Type: Sister Chromatid Exchange Assay
 Metabolic activation: with and without metabolic activation
 Result: negative

Genotoxicity in vivo

Light Cycle Oil

: Test Type: Cytogenetic assay
 Result: negative

Diesel Reference Fuel U-32

Version 1.15

Revision Date 2021-03-08

Diesel Reference Fuel U-32**Carcinogenicity** : Remarks: May cause cancer.**Reproductive toxicity**

C12-C14 Isoalkanes : Species: Rat
Sex: male and female
Application Route: oral gavage
Dose: 50, 200, 750 mg/kg/bw/d
Number of exposures: daily
Test period: 70 d
Method: OECD Test Guideline 416
NOAEL Parent: >750 mg/kg/bw/d
NOAEL F1: >750 mg/kg/bw/d
No adverse effects expected
Information given is based on data obtained from similar substances.

Developmental Toxicity

Light Cycle Oil : Species: Rat
Application Route: Dermal
Dose: 1, 50, 250 mg/kg/d
Number of exposures: once daily
Test period: GD 0-19
Method: OECD Guideline 414
NOAEL Teratogenicity: 1 mg/kg
NOAEL Maternal: 1 mg/kg

Diesel Reference Fuel U-32**Aspiration toxicity** : May be fatal if swallowed and enters airways.**CMR effects**

Light Cycle Oil : Carcinogenicity: Possible human carcinogen

C12-C14 Isoalkanes Carcinogenicity: Not available
Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects., In vivo tests did not show mutagenic effects
Teratogenicity: Animal testing did not show any effects on fetal development.
Reproductive toxicity: Animal testing did not show any effects on fertility.

Diesel Reference Fuel U-32**Further information** : Solvents may degrease the skin.**SECTION 12: Ecological information****Ecotoxicity effects
Toxicity to fish**

Diesel Reference Fuel U-32

Version 1.15

Revision Date 2021-03-08

Light Cycle Oil : LL50: > 0.3 mg/l
 Exposure time: 96 h
 Species: Oncorhynchus mykiss (rainbow trout)
 semi-static test Method: OECD Test Guideline 203

C12-C14 Isoalkanes LL50: > 1,000 mg/l
 Exposure time: 96 h
 Species: Oncorhynchus mykiss (rainbow trout)
 semi-static test Method: OECD Test Guideline 203
 Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates

Light Cycle Oil : EL50: 0.32 mg/l
 Exposure time: 48 h
 Species: Daphnia magna (Water flea)
 Immobilization Method: OECD Test Guideline 202

C12-C14 Isoalkanes EL50: > 1,000 mg/l
 Exposure time: 48 h
 Species: Daphnia magna (Water flea)
 static test Method: OECD Test Guideline 202
 Information given is based on data obtained from similar substances.

Toxicity to algae

Light Cycle Oil : EL50: 0.51 mg/l
 Exposure time: 72 h
 Species: Pseudokirchneriella subcapitata (green algae)
 Growth inhibition Method: OECD Test Guideline 201

C12-C14 Isoalkanes EL50: > 1,000 mg/l
 Exposure time: 72 h
 Species: Pseudokirchneriella subcapitata (green algae)
 Growth inhibition Method: OECD Test Guideline 201
 Information given is based on data obtained from similar substances.

M-Factor

Distillates (petroleum), light catalytic cracked	:	M-Factor (Acute Aquat. Tox.)	1
		M-Factor (Chron. Aquat. Tox.)	1

Toxicity to fish (Chronic toxicity)

C12-C14 Isoalkanes : No data available:

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

C12-C14 Isoalkanes : NOELR: 1 mg/l
 Exposure time: 21 d
 Species: Daphnia magna (Water flea)

Diesel Reference Fuel U-32

Version 1.15

Revision Date 2021-03-08

Information given is based on data obtained from similar substances.

Biodegradability : Taking into consideration the properties of several ingredients, the product is estimated not to be readily biodegradable according to OECD classification.

Elimination information (persistence and degradability)

Bioaccumulation : The product may be accumulated in organisms.

Mobility : This product may float or sink in water.

Results of PBT assessment

Light Cycle Oil : Non-classified PBT substance, Non-classified vPvB substance

C12-C14 Isoalkanes : Non-classified PBT substance, Non-classified vPvB substance

Additional ecological information : Very toxic to aquatic life with long lasting effects.

Ecotoxicology Assessment

Short-term (acute) aquatic hazard

Light Cycle Oil : Very toxic to aquatic life.

C12-C14 Isoalkanes : This material is not expected to be harmful to aquatic organisms.

Long-term (chronic) aquatic hazard

Light Cycle Oil : Very toxic to aquatic life with long lasting effects.

C12-C14 Isoalkanes : This material is not expected to be harmful to aquatic organisms.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

Diesel Reference Fuel U-32

Version 1.15

Revision Date 2021-03-08

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

UN1202, DIESEL FUEL, 3, III

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN1202, DIESEL FUEL, 3, III, (48°C), MARINE POLLUTANT, (LIGHT CYCLE OIL)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN1202, DIESEL FUEL, 3, III

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))

UN1202, DIESEL FUEL, 3, III, (D/E), ENVIRONMENTALLY HAZARDOUS, (LIGHT CYCLE OIL)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))

UN1202, DIESEL FUEL, 3, III, ENVIRONMENTALLY HAZARDOUS, (LIGHT CYCLE OIL)

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)

UN1202, DIESEL FUEL, 3, III, ENVIRONMENTALLY HAZARDOUS, (LIGHT CYCLE OIL)

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information**Notification status**

Europe REACH	:	This mixture contains only ingredients which have been registered according to Regulation (EU) No. 1907/2006 (REACH).
United States of America (USA) TSCA	:	On or in compliance with the active portion of the TSCA inventory
Switzerland CH INV	:	On the inventory, or in compliance with the inventory
Canada DSL	:	All components of this product are on the Canadian DSL
Australia AICS	:	On the inventory, or in compliance with the inventory

Diesel Reference Fuel U-32

Version 1.15

Revision Date 2021-03-08

New Zealand NZIoC	:	Not in compliance with the inventory
Japan ENCS	:	On the inventory, or in compliance with the inventory
Korea KECI	:	A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance or the exported amount does not exceed the minimum threshold quantity of the non-registered substance(s).
Philippines PICCS	:	Not in compliance with the inventory
China IECSC	:	On the inventory, or in compliance with the inventory
Taiwan TCSI	:	On the inventory, or in compliance with the inventory
Other regulations	:	Law on the Prevention and Control of Occupational Diseases

SECTION 16: Other information**Further information**

Legacy SDS Number : 664950

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery

Diesel Reference Fuel U-32

Version 1.15

Revision Date 2021-03-08

			Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		

SAFETY DATA SHEET

Gasoline (All Grades)



Section 1. Identification

Product name : Gasoline (All Grades)
Product code : Not available.
Synonyms : Gasoline, Unleaded Gasoline, Regular Gasoline, Premium Gasoline, Oxyfuel, Reformulated Gasoline

Relevant identified uses of the substance or mixture and uses advised against

Product use : Use in fuel - Industrial use
Area of application : Industrial applications.

Manufacturer : HollyFrontier Refining & Marketing LLC
2828 North Harwood
Suite 1300
Dallas, Texas 75201
USA
Customer Service: (888) 286-8836

Emergency telephone number : CHEMTREC® (800) 424-9300
CCN 201319

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : H224 FLAMMABLE LIQUIDS - Category 1
H315 SKIN IRRITATION - Category 2
H319 EYE IRRITATION - Category 2A
H340 GERM CELL MUTAGENICITY - Category 1
H350 CARCINOGENICITY - Category 1B
H361 TOXIC TO REPRODUCTION (Fertility) - Category 2
H361 TOXIC TO REPRODUCTION (Unborn child) - Category 2
H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2
H304 ASPIRATION HAZARD - Category 1
Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 9%
Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 4%

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H224 - Extremely flammable liquid and vapor.
H319 - Causes serious eye irritation.
H315 - Causes skin irritation.
H340 - May cause genetic defects.
H350 - May cause cancer.
H361 - Suspected of damaging fertility or the unborn child.
H304 - May be fatal if swallowed and enters airways.
H336 - May cause drowsiness or dizziness.
H373 - May cause damage to organs through prolonged or repeated exposure. (liver)

Precautionary statements

Prevention

- : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Wash hands thoroughly after handling.

Response

- : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage

- : Store in a well-ventilated place. Keep cool.

Disposal

- : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified

- : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	Other names	%	CAS number
Gasoline	-	88 - 100	86290-81-5
ethanol	-	0 - 10	64-17-5
toluene	-	0 - 10	108-88-3
1,2,4-trimethylbenzene	-	0 - 5	95-63-6
benzene	-	0 - 5	71-43-2
n-hexane	-	0 - 3	110-54-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures**Description of necessary first aid measures****Eye contact**

- : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention. Continue to rinse for at least 15 minutes.

Inhalation

- : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact

- : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 15 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

- Ingestion** : Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

- Eye contact** : pain or irritation; watering; redness
- Inhalation** : respiratory tract irritation; coughing; nausea or vomiting; headache; drowsiness/fatigue; dizziness/vertigo; unconsciousness
- Skin contact** : irritation; redness; dryness; cracking
- Ingestion** : nausea or vomiting

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents.
- Specific treatments** : No specific treatment.
- Protection of medical responders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

- Specific hazards arising from the chemical** : Extremely flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, waterways, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. High pressure skin injections are serious medical emergencies. Injury will not appear serious at first. Within a few hours, tissue will become swollen, discolored and extremely painful.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Gasoline	ACGIH TLV (United States, 3/2017). TWA: 300 ppm 8 hours. TWA: 890 mg/m ³ 8 hours. STEL: 500 ppm 15 minutes. STEL: 1480 mg/m ³ 15 minutes.
ethanol	ACGIH TLV (United States, 3/2017). STEL: 1000 ppm 15 minutes. NIOSH REL (United States, 10/2016). TWA: 1000 ppm 10 hours. TWA: 1900 mg/m ³ 10 hours. OSHA PEL (United States, 6/2016). TWA: 1000 ppm 8 hours. TWA: 1900 mg/m ³ 8 hours.
toluene	OSHA PEL Z2 (United States, 2/2013). TWA: 200 ppm 8 hours. CEIL: 300 ppm AMP: 500 ppm 10 minutes. NIOSH REL (United States, 10/2016). TWA: 100 ppm 10 hours. TWA: 375 mg/m ³ 10 hours. STEL: 150 ppm 15 minutes. STEL: 560 mg/m ³ 15 minutes. ACGIH TLV (United States, 3/2017). TWA: 20 ppm 8 hours.
1,2,4-trimethylbenzene	ACGIH TLV (United States, 3/2017). TWA: 25 ppm 8 hours. TWA: 123 mg/m ³ 8 hours. NIOSH REL (United States, 10/2016). TWA: 25 ppm 10 hours. TWA: 125 mg/m ³ 10 hours.
benzene	ACGIH TLV (United States, 3/2017). Absorbed through skin. TWA: 0.5 ppm 8 hours. TWA: 1.6 mg/m ³ 8 hours. STEL: 2.5 ppm 15 minutes. STEL: 8 mg/m ³ 15 minutes. OSHA PEL Z2 (United States, 2/2013). TWA: 10 ppm 8 hours. CEIL: 25 ppm AMP: 50 ppm 10 minutes. NIOSH REL (United States, 10/2016). TWA: 0.1 ppm 10 hours. STEL: 1 ppm 15 minutes. OSHA PEL (United States, 6/2016). TWA: 1 ppm 8 hours. STEL: 5 ppm 15 minutes.
n-hexane	NIOSH REL (United States, 10/2016). TWA: 50 ppm 10 hours. TWA: 180 mg/m ³ 10 hours. ACGIH TLV (United States, 3/2017). Absorbed through skin. TWA: 50 ppm 8 hours. OSHA PEL (United States, 6/2016). TWA: 500 ppm 8 hours. TWA: 1800 mg/m ³ 8 hours.

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures	: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
Skin protection	
Hand protection	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Body protection	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
Other skin protection	: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid.
Color	: Clear to Amber
Odor	: Gasoline
Odor threshold	: Not available.
pH	: Not available.
Melting point	: Not available.
Boiling point	: 26.667 to 226.67°C (80 to 440°F)
Flash point	: -40°C (-40°F)
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not applicable.
Lower and upper explosive (flammable) limits	: Lower: 1.4% Upper: 7.6%
Vapor pressure	: 350-760 mm Hg at 37.8°C (100°F)
Vapor density	: 3 to 4 [Air = 1]
Specific gravity	: 0.75 [15.5°C (60°F)]
Density	: Not available.
Solubility	: Negligible
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: >260°C (>500°F)
Decomposition temperature	: Not available.
Viscosity	: Kinematic (40°C (104°F)): 0.0064 cm ² /s (0.64 cSt)
Flow time (ISO 2431)	: Not available.

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerization will not occur.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
- Incompatible materials** : Reactive or incompatible with the following materials:
oxidizing materials
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Gasoline	LC50 Inhalation Vapor	Rat	>5.2 mg/l	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
ethanol	LC50 Inhalation Dusts and mists	Rat	124700 mg/m ³	4 hours
	LD50 Oral	Rat	7 g/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
ethanol	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes	-
	Eyes - Moderate irritant	Rabbit	-	100 milligrams	-
	Eyes - Severe irritant	Rabbit	-	100 microliters	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
				400 milligrams	-

Sensitization

Product/ingredient name	Route of exposure	Species	Result
Gasoline	skin	Guinea pig	Not sensitizing

Carcinogenicity

Product/ingredient name	OSHA	IARC	NTP
toluene	-	3	-
benzene	+	1	Known to be a human carcinogen.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Gasoline	Category 3	Not applicable.	Narcotic effects
ethanol	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
ethanol	Category 2	Not determined	liver

Aspiration hazard

Name	Result
Gasoline	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Delayed and immediate effects and also chronic effects from short and long term exposure**Short term exposure**

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : May cause damage to organs through prolonged or repeated exposure.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : May cause genetic defects.

Teratogenicity : Suspected of damaging the unborn child.

Developmental effects : reduced fetal weight; skeletal malformations

Fertility effects : Suspected of damaging fertility.

Numerical measures of toxicity**Acute toxicity estimates**

Route	ATE value
Oral	9768.4 mg/kg
Inhalation (vapors)	795.6 mg/l

Section 12. Ecological information**Toxicity**

Product/ingredient name	Result	Species	Exposure
ethanol	Acute EC50 17.921 mg/l Marine water	Algae - Ulva pertusa	96 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
toluene	301C Ready Biodegradability - Modified MITI Test (I)	100 % - 14 days	-	-
benzene	301C Ready Biodegradability - Modified MITI Test (I)	100 % - 14 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
ethanol	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Gasoline	2 to 7	10 to 2500	high
ethanol	-0.35	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Toluene; Benzene, methyl-Benzene (I,T)	108-88-3 71-43-2	Listed Listed	U220 U019

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	UN1203	UN1203	UN1203
UN proper shipping name	Gasoline	GASOLINE	Gasoline
Transport hazard class(es)	3 	3 	3 
Packing group	II	II	II
Environmental hazards	No.	No.	Yes. The environmentally hazardous substance mark is not required.

Additional information

- DOT Classification** : **Reportable quantity** 400 lbs / 181.6 kg [63.965 gal / 242.13 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
Limited quantity Yes.
Packaging instruction Exceptions: 150. Non-bulk: 202. Bulk: 242.
Quantity limitation Passenger aircraft/rail: 5 L. Cargo aircraft: 60 L.
Special provisions 144, 177, B1, B33, IB2, T4
- IMDG** : **Emergency schedules** F-E, S-E
Special provisions 243
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.
Quantity limitation Passenger and Cargo Aircraft: 5 L. Packaging instructions: 353. Cargo Aircraft Only: 60 L. Packaging instructions: 364. Limited Quantities - Passenger Aircraft: 1 L. Packaging instructions: Y341.
Special provisions A100

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
Clean Water Act (CWA) 307: toluene; benzene
Clean Water Act (CWA) 311: toluene; benzene

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

DEA List II Chemicals (Essential Chemicals) : Listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 1
 SKIN IRRITATION - Category 2
 EYE IRRITATION - Category 2A
 GERM CELL MUTAGENICITY - Category 1
 CARCINOGENICITY - Category 1B
 TOXIC TO REPRODUCTION (Fertility) - Category 2
 TOXIC TO REPRODUCTION (Unborn child) - Category 2
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2
 ASPIRATION HAZARD - Category 1

Composition/information on ingredients

Name	%	Classification
Gasoline	88 - 100	FLAMMABLE LIQUIDS - Category 1 SKIN IRRITATION - Category 2 GERM CELL MUTAGENICITY - Category 1B CARCINOGENICITY - Category 1B TOXIC TO REPRODUCTION (Fertility) - Category 2 TOXIC TO REPRODUCTION (Unborn child) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1
ethanol	0 - 10	HNOC - Defatting irritant FLAMMABLE LIQUIDS - Category 2

toluene	0 - 10	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2 HNOC - Defatting irritant FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A TOXIC TO REPRODUCTION (Unborn child) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (nervous system) (inhalation) - Category 2 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant
1,2,4-trimethylbenzene	0 - 5	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant
benzene	0 - 5	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A GERM CELL MUTAGENICITY - Category 1B CARCINOGENICITY - Category 1A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (haematopoietic system) (oral) - Category 1 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (haematopoietic system) (inhalation) - Category 1
n-hexane	0 - 3	ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A TOXIC TO REPRODUCTION (Fertility) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (nervous system, peripheral nervous system) - Category 2 ASPIRATION HAZARD - Category 1 HNOC - Static-accumulating flammable liquid

[SARA 313](#)

	Product name	CAS number	%
Form R - Reporting requirements	toluene	108-88-3	0 - 10
	1,2,4-trimethylbenzene	95-63-6	0 - 5
	benzene	71-43-2	0 - 5
	n-hexane	110-54-3	0 - 3
Supplier notification	toluene	108-88-3	0 - 10
	1,2,4-trimethylbenzene	95-63-6	0 - 5
	benzene	71-43-2	0 - 5
	n-hexane	110-54-3	0 - 3

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

- Massachusetts** : The following components are listed: TOLUENE; METHYLBENZENE; PSEUDOCUMENE; BENZENE; HEXANE; N-HEXANE; ETHYL ALCOHOL; DENATURED ALCOHOL
- New York** : The following components are listed: Toluene; Benzene; Hexane
- New Jersey** : The following components are listed: TOLUENE; BENZENE, METHYL-; PSEUDOCUMENE; 1,2,4-TRIMETHYL BENZENE; BENZENE; n-HEXANE; HEXANE; ETHYL ALCOHOL; ALCOHOL
- Pennsylvania** : The following components are listed: GASOLINE; BENZENE, METHYL-; PSEUDOCUMENE; BENZENE; BENZOL DILUENT; HEXANE; DENATURED ALCOHOL; ETHANOL

California Prop. 65

WARNING: This product can expose you to Benzene, which is known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to Toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Ingredient name	No significant risk level	Maximum acceptable dosage level
Toluene	-	Yes.
Benzene	Yes.	Yes.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Other information

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
Flam. Liq. 1, H224 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Muta. 1, H340 Carc. 1B, H350 Repr. 2, H361 (Fertility) Repr. 2, H361 (Unborn child) STOT SE 3, H336 STOT RE 2, H373 (liver) Asp. Tox. 1, H304	On basis of test data Calculation method Calculation method Calculation method Expert judgment Calculation method Calculation method Calculation method Expert judgment Calculation method

Date of issue/Date of revision : 11/08/2017

Date of previous issue : 03/18/2014

Version : 2

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named manufacturer, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

**GOJO® ORIGINAL FORMULA™ Hand Cleaner**

Version 1.1

SDS Number: 400000000198

Revision Date: 02/28/2018

SECTION 1. IDENTIFICATION

Product name : GOJO® ORIGINAL FORMULA™ Hand Cleaner

Manufacturer or supplier's details

Company name of supplier : GOJO Industries, Inc.

Address : One GOJO Plaza, Suite 500
Akron, Ohio 44311

Telephone : 1 (330) 255-6000

Emergency telephone number : CHEMTREC 1-800-424-9300
CHEMTREC +1-703-527-3887: Outside USA & CANADA

Recommended use of the chemical and restrictions on use

Recommended use : Skin-care

Restrictions on use : This is a personal care or cosmetic product that is safe for consumers and other users under normal and reasonably foreseeable use. Cosmetics and consumer products, specifically defined by regulations around the world, are exempt from the requirement of an SDS for the consumer. While this material is not considered hazardous, this SDS contains valuable information critical to the safe handling and proper use of the product for industrial workplace conditions as well as unusual and unintended exposures such as large spills. This SDS should be retained and available for employees and other users of this product. For specific intended-use guidance, please refer to the information provided on the package or instruction sheet.

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Serious eye damage : Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H318 Causes serious eye damage.

**GOJO® ORIGINAL FORMULA™ Hand Cleaner**

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Precautionary statements : **Prevention:**
P280 Wear eye protection/ face protection.
Response:
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Hazardous components**

Chemical name	CAS-No.	Concentration (%)
C11-15 Alkane/cycloalkane	64742-47-8	>= 30 - < 50
Mineral Oil (Paraffinum Liquidum)	8042-47-5	>= 10 - < 20
Trideceth-9	24938-91-8	>= 1 - < 5
Propylene Glycol	57-55-6	>= 1 - < 5
Petrolatum	8009-03-8	>= 1 - < 5
Sodium Hydroxymethylglycinate	70161-44-3	>= 0.1 - < 1
Chloroxylonol	88-04-0	>= 0.1 - < 1

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air.
If symptoms persist, call a physician.

In case of skin contact : Wash with water and soap as a precaution.
Get medical attention if irritation develops and persists.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
If easy to do, remove contact lens, if worn.
Seek medical advice.

If swallowed : If swallowed, DO NOT induce vomiting.
Rinse mouth with water.
Obtain medical attention.

Most important symptoms and effects, both acute and delayed : Causes serious eye damage.

Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing

**GOJO® ORIGINAL FORMULA™ Hand Cleaner**

Version 1.1

SDS Number: 400000000198

Revision Date: 02/28/2018

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water spray
Alcohol-resistant foam
Dry chemical
Carbon dioxide (CO₂)
- Unsuitable extinguishing media : None known.
- Hazardous combustion products : Carbon oxides
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
Keep people away from and upwind of spill/leak.
Material can create slippery conditions.
- Environmental precautions : Discharge into the environment must be avoided.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g. by containment or oil barriers).
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Keep in suitable, closed containers for disposal.
Clean contaminated floors and objects thoroughly while observing environmental regulations.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : For personal protection see section 8.
Do not swallow.


GOJO® ORIGINAL FORMULA™ Hand Cleaner

Version 1.1

SDS Number: 400000000198

Revision Date: 02/28/2018

Avoid contact with eyes.
Keep container closed when not in use.

Conditions for safe storage : Keep in properly labelled containers.
Keep container tightly closed in a dry and well-ventilated place.
Store in accordance with the particular national regulations.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
C11-15 Alkane/cycloalkane	64742-47-8	TWA (Mist)	5 mg/m3	OSHA Z-1
		TWA	200 mg/m3 (as total hydrocarbon vapor)	ACGIH
		TWA (Mist)	5 mg/m3	NIOSH REL
		ST (Mist)	10 mg/m3	NIOSH REL
Mineral Oil (Paraffinum Liquidum)	8042-47-5	TWA (Mist)	5 mg/m3	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m3	ACGIH
		TWA (Mist)	5 mg/m3	NIOSH REL
		ST (Mist)	10 mg/m3	NIOSH REL
		TWA (Mist)	5 mg/m3	OSHA P0
Propylene Glycol	57-55-6	TWA	10 mg/m3	US WEEL
Petrolatum	8009-03-8	TWA (Mist)	5 mg/m3	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m3	ACGIH
		TWA (Mist)	5 mg/m3	NIOSH REL
		ST (Mist)	10 mg/m3	NIOSH REL
		TWA (Mist)	5 mg/m3	OSHA P0

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

Hand protection
Remarks : No special protective equipment required.

Eye protection : Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : No special measures necessary provided product is used correctly.

Protective measures : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to

**GOJO® ORIGINAL FORMULA™ Hand Cleaner**

Version 1.1

SDS Number: 400000000198

Revision Date: 02/28/2018

the specific work-place.
Ensure that eye flushing systems and safety showers are located close to the working place.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Avoid contact with eyes.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : opaque, white, yellow

Odour : solvent-like

pH : 9.0, (20 °C)

Melting point/freezing point : No data available

Initial boiling point and boiling range : 98 °C

Flash point : > 100 °C

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Flammability (liquids) : No data available

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Density : 0.883 g/cm³

Solubility(ies)
Water solubility : soluble

Partition coefficient: n-octanol/water : Not applicable

Auto-ignition temperature : No data available

Thermal decomposition : The substance or mixture is not classified self-reactive.

Viscosity
Viscosity, kinematic : > 100000 mm²/s (20 °C)

**GOJO® ORIGINAL FORMULA™ Hand Cleaner**

Version 1.1

SDS Number: 400000000198

Revision Date: 02/28/2018

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Conditions to avoid : No data available

Incompatible materials : Strong oxidizing agents

Hazardous decomposition products : No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Inhalation
Eye contact
Skin contact

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

Components:**C11-15 Alkane/cycloalkane:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5.3 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 3,160 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Mineral Oil (Paraffinum Liquidum):

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

**GOJO® ORIGINAL FORMULA™ Hand Cleaner**

Version 1.1

SDS Number: 400000000198

Revision Date: 02/28/2018

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Trideceth-9:

Acute oral toxicity : LD50 (Rat): > 500 - < 2,000 mg/kg

Propylene Glycol:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rabbit): > 159 mg/l, > 51091 ppm

Exposure time: 4 h

Test atmosphere: dust/mist

Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Petrolatum:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on data from similar materials

Sodium Hydroxymethylglycinate:

Acute oral toxicity : LD50 (Rat): 1,050 mg/kg

Chloroxylenol:

Acute oral toxicity : Acute toxicity estimate : 500 mg/kg
Method: Expert judgement
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Acute inhalation toxicity : LC50 (Rat): > 6.29 mg/l
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Components:**C11-15 Alkane/cycloalkane:**

Assessment: Repeated exposure may cause skin dryness or cracking.

Mineral Oil (Paraffinum Liquidum):

Species: Rabbit

Result: No skin irritation

**GOJO® ORIGINAL FORMULA™ Hand Cleaner**

Version 1.1

SDS Number: 400000000198

Revision Date: 02/28/2018

Trideceth-9:

Species: Rabbit

Result: No skin irritation

Propylene Glycol:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

Petrolatum:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

Remarks: Based on data from similar materials

Sodium Hydroxymethylglycinate:

Species: Rabbit

Result: Skin irritation

Chloroxylonol:

Result: Skin irritation

Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Serious eye damage/eye irritation

Causes serious eye damage.

Components:**C11-15 Alkane/cycloalkane:**

Species: Rabbit

Result: No eye irritation

Mineral Oil (Paraffinum Liquidum):

Species: Rabbit

Result: No eye irritation

Trideceth-9:

Species: Rabbit

Result: Irreversible effects on the eye

Propylene Glycol:

Species: Rabbit

Result: No eye irritation

Method: OECD Test Guideline 405

Petrolatum:

Species: Rabbit

Result: No eye irritation

Method: OECD Test Guideline 405

Remarks: Based on data from similar materials

Sodium Hydroxymethylglycinate:

Species: Rabbit

Result: Irritation to eyes, reversing within 21 days

Chloroxylonol:

**GOJO® ORIGINAL FORMULA™ Hand Cleaner**

Version 1.1

SDS Number: 400000000198

Revision Date: 02/28/2018

Result: Irreversible effects on the eye

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information.

Respiratory sensitisation: Not classified based on available information.

Product:

Result: Does not cause skin sensitisation.

Remarks: Patch test on human volunteers did not demonstrate sensitisation properties.

Components:**C11-15 Alkane/cycloalkane:**

Test Type: Maximisation Test (GPMT)

Exposure routes: Skin contact

Species: Guinea pig

Result: negative

Remarks: Based on data from similar materials

Mineral Oil (Paraffinum Liquidum):

Test Type: Buehler Test

Exposure routes: Skin contact

Species: Guinea pig

Result: negative

Propylene Glycol:

Test Type: Maximisation Test (GPMT)

Exposure routes: Skin contact

Species: Guinea pig

Result: negative

Petrolatum:

Test Type: Buehler Test

Exposure routes: Skin contact

Species: Guinea pig

Result: negative

Remarks: Based on data from similar materials

Sodium Hydroxymethylglycinate:

Test Type: Maximisation Test (GPMT)

Exposure routes: Skin contact

Species: Guinea pig

Result: positive

Assessment: Probability or evidence of skin sensitisation in humans

Chloroxylenol:

Assessment: Probability or evidence of skin sensitisation in humans

Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Germ cell mutagenicity

Not classified based on available information.

Components:**C11-15 Alkane/cycloalkane:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

**GOJO® ORIGINAL FORMULA™ Hand Cleaner**

Version 1.1

SDS Number: 400000000198

Revision Date: 02/28/2018

Result: negative

Genotoxicity in vivo : Test Type: Chromosomal aberration
Test species: Rat
Application Route: Intraperitoneal injection
Result: negative
Remarks: Based on data from similar materials

Mineral Oil (Paraffinum Liquidum):

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Test species: Mouse
Application Route: Intraperitoneal injection
Method: OECD Test Guideline 474
Result: negative
Remarks: Based on data from similar materials

Propylene Glycol:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Test species: Mouse
Application Route: Intraperitoneal injection
Result: negative

Petrolatum:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Test species: Mouse
Application Route: Intraperitoneal injection
Method: OECD Test Guideline 474
Result: negative
Remarks: Based on data from similar materials

Sodium Hydroxymethylglycinate:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Genotoxicity in vivo : Test Type: Unscheduled DNA synthesis (UDS) test with mammalian liver cells in vivo
Test species: Rat
Result: negative

Chloroxylenol:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Carcinogenicity

**GOJO® ORIGINAL FORMULA™ Hand Cleaner**

Version 1.1

SDS Number: 400000000198

Revision Date: 02/28/2018

Not classified based on available information.

Components:**Mineral Oil (Paraffinum Liquidum):**

Species: Rat

Application Route: Ingestion

Exposure time: 24 Months

Result: negative

Propylene Glycol:

Species: Rat

Application Route: Ingestion

Exposure time: 2 Years

Result: negative

Petrolatum:

Species: Rat

Application Route: Ingestion

Exposure time: 2 Years

Result: negative

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Components:**C11-15 Alkane/cycloalkane:**

Effects on fertility

: Test Type: One-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

Remarks: Based on data from similar materials

Effects on foetal development

: Test Type: Embryo-foetal development

Species: Rat

Application Route: Ingestion

Result: negative

Mineral Oil (Paraffinum Liquidum):

Effects on fertility

: Test Type: One-generation reproduction toxicity study

Species: Rat

Application Route: Skin contact

Result: negative

**GOJO® ORIGINAL FORMULA™ Hand Cleaner**

Version 1.1

SDS Number: 400000000198

Revision Date: 02/28/2018

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Result: negative

Propylene Glycol:

Effects on fertility : Species: Mouse
Application Route: Ingestion
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development
Species: Mouse
Application Route: Ingestion
Result: negative

Petrolatum:

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: Skin contact
Result: negative
Remarks: Based on data from similar materials

Sodium Hydroxymethylglycinate:

Effects on foetal development : Species: Rat
Application Route: Ingestion
Result: negative

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Repeated dose toxicity**Components:****C11-15 Alkane/cycloalkane:**

Species: Rat
NOAEL: > 10.4 mg/l
Application Route: inhalation (vapour)
Exposure time: 90 d
Remarks: Based on data from similar materials

Mineral Oil (Paraffinum Liquidum):

Species: Rat
LOAEL: 160 mg/kg
Application Route: Ingestion
Exposure time: 90 d

**GOJO® ORIGINAL FORMULA™ Hand Cleaner**

Version 1.1

SDS Number: 400000000198

Revision Date: 02/28/2018

Species: Rat
LOAEL: ≥ 1 mg/l
Application Route: inhalation (dust/mist/fume)
Exposure time: 4 w
Method: OECD Test Guideline 412

Propylene Glycol:

Species: Rat
NOAEL: 1,700 mg/kg
Application Route: Ingestion
Exposure time: 2 y

Petrolatum:

Species: Rat
NOAEL: 5,000 mg/kg
Application Route: Ingestion
Exposure time: 2 y

Chloroxylenol:

Species: Rabbit
LOAEL: 180 mg/kg
Application Route: Skin contact
Exposure time: 90 d

Aspiration toxicity

Not classified based on available information.

Components:**C11-15 Alkane/cycloalkane:**

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Mineral Oil (Paraffinum Liquidum):

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****C11-15 Alkane/cycloalkane:**

Toxicity to fish	: LL50 (Danio rerio (zebra fish)): > 250 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EL50 (Acartia tonsa): > 3,193 mg/l Exposure time: 48 h Test substance: Water Accommodated Fraction
Toxicity to algae	: EL50 (Skeletonema costatum (marine diatom)): > 3,200 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction

**GOJO® ORIGINAL FORMULA™ Hand Cleaner**

Version 1.1

SDS Number: 400000000198

Revision Date: 02/28/2018

NOELR (Skeletonema costatum (marine diatom)): 993 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR (Ceriodaphnia Dubia (water flea)): > 70 mg/l
Exposure time: 8 d
Test substance: Water Accommodated Fraction

Toxicity to bacteria : EC50: > 100 mg/l
Exposure time: 3 h

Mineral Oil (Paraffinum Liquidum):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae : NOEC (Pseudokirchneriella subcapitata (green algae)): 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 1,000 mg/l
Exposure time: 28 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 1,000 mg/l
Exposure time: 21 d

Trideceth-9:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): > 1 - 10 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50: > 1 - 10 mg/l
Exposure time: 48 h

Toxicity to algae : EC50: > 1 - 10 mg/l
Exposure time: 72 h

Propylene Glycol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 40,613 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Ceriodaphnia Dubia (water flea)): 18,340 mg/l
Exposure time: 48 h

Toxicity to algae : EC50 (Skeletonema costatum (marine diatom)): 19,000 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : Chronic Toxicity Value: 2,500 mg/l
Exposure time: 30 d


GOJO® ORIGINAL FORMULA™ Hand Cleaner

Version 1.1

SDS Number: 400000000198

Revision Date: 02/28/2018

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Ceriodaphnia Dubia (water flea)): 29,000 mg/l
Exposure time: 7 d

Toxicity to bacteria : NOEC (Pseudomonas putida): > 20,000 mg/l
Exposure time: 18 h

Petrolatum:

Toxicity to fish : LL50 (Pimephales promelas (fathead minnow)): > 100 mg/l
Exposure time: 96 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10,000 mg/l
Exposure time: 48 h
Test substance: Water Accommodated Fraction
Remarks: Based on data from similar materials

Toxicity to algae : NOEL (Pseudokirchneriella subcapitata (green algae)): >= 100 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 10 mg/l
Exposure time: 21 d
Test substance: Water Accommodated Fraction
Remarks: Based on data from similar materials

Sodium Hydroxymethylglycinate:

Toxicity to fish : LC50: > 10 - 100 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia pulex (Water flea)): > 10 - 100 mg/l
Exposure time: 48 h

Toxicity to algae : ErC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): > 10 - 100 mg/l
Exposure time: 72 h

Toxicity to bacteria : EC50: > 100 mg/l
Exposure time: 120 h

Chloroxylonol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.76 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 7.7 mg/l
Exposure time: 48 h

M-Factor (Acute aquatic toxicity) : 1

**GOJO® ORIGINAL FORMULA™ Hand Cleaner**

Version 1.1

SDS Number: 400000000198

Revision Date: 02/28/2018

Persistence and degradability**Components:****C11-15 Alkane/cycloalkane:**

Biodegradability : Result: Readily biodegradable.
Biodegradation: 82 %
Exposure time: 24 d
Method: OECD Test Guideline 301F

Mineral Oil (Paraffinum Liquidum):

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 31 %
Exposure time: 28 d

Trideceth-9:

Biodegradability : Result: Readily biodegradable.
Biodegradation: > 60 %
Exposure time: 28 d

Propylene Glycol:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 98.3 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Petrolatum:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 31 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
Remarks: Based on data from similar materials

Sodium Hydroxymethylglycinate:

Biodegradability : Result: Readily biodegradable.

Bioaccumulative potential**Components:****Propylene Glycol:**

Partition coefficient: n-octanol/water : log Pow: -1.07

Sodium Hydroxymethylglycinate:

Partition coefficient: n-octanol/water : log Pow: < 3

Chloroxylenol:

Partition coefficient: n-octanol/water : log Pow: 3.27

Mobility in soil

No data available

Other adverse effects

No data available

**GOJO® ORIGINAL FORMULA™ Hand Cleaner**

Version 1.1

SDS Number: 400000000198

Revision Date: 02/28/2018

Product:

Regulation

40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues

: Dispose of in accordance with local regulations.

Contaminated packaging

: Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.**SECTION 14. TRANSPORT INFORMATION****International Regulation****IATA-DGR**

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

National Regulations**49 CFR**

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Sodium Hydroxide	1310-73-2	1000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards

: Acute Health Hazard

SARA 302

: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.


GOJO® ORIGINAL FORMULA™ Hand Cleaner

Version 1.1

SDS Number: 400000000198

Revision Date: 02/28/2018

SARA 313

: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489):

Propylene Glycol	57-55-6	1.7691 %

This product does not contain any VOC exemptions listed under the U.S. Clean Air Act Section 450.

Clean Water Act

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations**Massachusetts Right To Know**

C11-15 Alkane/cycloalkane	64742-47-8	30 - 50 %
Mineral Oil (Paraffinum Liquidum)	8042-47-5	10 - 20 %
Petrolatum	8009-03-8	1 - 5 %
Sodium Hydroxymethylglycinate	70161-44-3	0.1 - 1 %

Pennsylvania Right To Know

C11-15 Alkane/cycloalkane	64742-47-8	30 - 50 %
Water (Aqua)	7732-18-5	30 - 50 %
Mineral Oil (Paraffinum Liquidum)	8042-47-5	10 - 20 %
Oleic Acid	112-80-1	5 - 10 %
Trideceth-9	24938-91-8	1 - 5 %
Propylene Glycol	57-55-6	1 - 5 %
Petrolatum	8009-03-8	1 - 5 %
Sodium Hydroxide	1310-73-2	0.1 - 1 %
Sodium Hydroxymethylglycinate	70161-44-3	0.1 - 1 %

New Jersey Right To Know

C11-15 Alkane/cycloalkane	64742-47-8	30 - 50 %
Water (Aqua)	7732-18-5	30 - 50 %
Mineral Oil (Paraffinum Liquidum)	8042-47-5	10 - 20 %
Oleic Acid	112-80-1	5 - 10 %
Trideceth-9	24938-91-8	1 - 5 %
Propylene Glycol	57-55-6	1 - 5 %
Sodium Hydroxymethylglycinate	70161-44-3	0.1 - 1 %

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory


GOJO® ORIGINAL FORMULA™ Hand Cleaner

Version 1.1

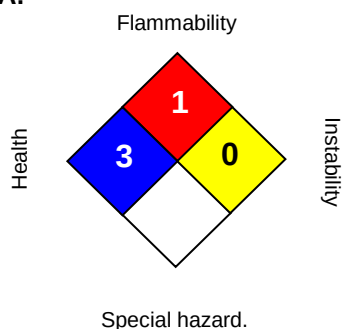
SDS Number: 400000000198

Revision Date: 02/28/2018

AICS	: On the inventory, or in compliance with the inventory
DSL	: On the inventory, or in compliance with the inventory
ENCS	: On the inventory, or in compliance with the inventory
ISHL	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: On the inventory, or in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
NZIoC	: On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

SECTION 16. OTHER INFORMATION
Further information
NFPA:

HMIS III:

HEALTH	3
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 02/28/2018

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Section 1 – Product & Company Identification

Product Name: GREENLEE Hydraulic Oil

Product Catalog No: 4016GB and 4017GB

Product ID No: 90510593 (Gallon); 90508608 (Quart)

Recommended Use: For use with Greenlee hydraulic equipment

Restrictions on Use: Industrial use only

Company Information:

<u>North America</u> GREENLEE TOOLS, INC. 4455 Boeing Drive Rockford, Illinois 61109-2932 1-815-387-9547 (8:00 am – 5:00 pm EST, M-F) Emergency Telephone call 9-1-1 or local emergency number www.Greenlee.com	<u>Canada</u> Emerson Electric Canada Limited 66 Leek Crescent , Richmond Hill, Ontario L4B 1H1 905-762-1010

Revision: C

Issue Date: January 12, 2024

Product Name : GREENLEE Hydraulic Oil

Section 2 – Hazards Identification

EMERGENCY OVERVIEW				
		HMIS		
GHS Classification		HEALTH	1	
Physical Hazards	Not Classified	FLAMMABILITY	1	
		PHYSICAL HAZARD	0	
Health and Environmental Hazards	See below	PERSONAL PROTECTION	See Section 8	
Signal Word	WARNING			

Health and Environmental Hazards**Eye damage/irritation** Category 2B – Causes eye irritation.**Precautionary Statements**

Wash thoroughly after handling.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.**If eye irritation persists:** Get medical advice or attention.**Section 3 – Composition / Information On Ingredients**

Component	CAS Number	Percentage
Petroleum oil	64742-65-0	>90

Section 4 – First Aid Measures

Skin Contact	First aid not normally required. Remove contaminated clothing. Wash area of contact with soap and water. Wash clothing before reuse. Get medical attention if irritation occurs and persists.
Eye Contact	Remove contact lenses. Flush with water until all traces of material are gone. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get medical attention if irritation persists.
Inhalation	Remove affected person from source of exposure. Get medical attention if discomfort persists.
Ingestion	Do not induce vomiting because of danger of aspiration into

Product Name : GREENLEE Hydraulic Oil

lungs. If spontaneous vomiting occurs, monitor for breathing difficulty. Get medical attention.

Section 5 – Fire Fighting Measures

Basic Firefighting Procedures

Treat as an oil fire. Do not use a water jet. Use water spray, dry chemical, foam or CO₂ to extinguish fire. Use a water spray to cool fire-exposed containers, structures and to protect personnel. Exposed firefighters should wear MSHA/NIOSH approved self-contained breathing apparatus with full-face mask and full protective equipment. Flush spills away from sources of ignition.

Unusual Fire and Explosion Hazards

Combustible at high temperatures. Irritating or toxic substances may be emitted.

Section 6 – Accidental Release Measures

Refer to Section 8: Exposure Control and Personal Protection

Emergency Action	Isolate release area and keep unnecessary people away. Exercise caution regarding personnel safety and exposure.
Spill/Leak Procedure	Floor and surfaces may be slippery. Dike with sand or other noncombustible material. Flush area with water provided runoff does not enter drain or sewer; use absorbent material and dispose of properly.
Notification	Any spill or release to navigable water that causes a visible sheen upon the water must be reported immediately to the National Response Center (800/424-8802), as required by U.S. federal law.

Product Name : GREENLEE Hydraulic Oil**Section 7 – Handling And Storage****Refer to Section 8: Exposure Control and Personal Protection****Handling**

Wear proper protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Do not ingest. For industrial use only. Use good hygiene practices when handling product, including changing and laundering work clothes after use. Get medical attention if you are exposed and feel unwell. The shipping and storage container is not designed to be pressurized. Do not use pressure to empty the container as it may rupture with explosive force. Containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly. Empty containers may contain residue or vapors. Do not cut, grind, drill, weld or reuse containers.

Storage

Store product in closed containers in a well-ventilated area away from heat, sources of ignition and incompatibles. Do not store in unlabeled containers. Empty containers may contain residue or vapors.

Section 8 – Exposure Controls / Personal Protection**Component**
Petroleum oil**ACGIH TLV**
5 mg/m³**OSHA PEL**
5 mg/m³**Engineering Controls**

Use appropriate ventilation to maintain airborne concentration limits below recommended exposure limits.

Eye and Face Protection

Wear safety glasses; use face shield if splashing is possible.

Skin Protection

Oil resistant gloves should be used to avoid repeated contact.

Respiratory Protection

Not normally needed. A NIOSH or MSHA approved respirator should be used in areas with high vapor concentrations or oil misting.

Product Name : GREENLEE Hydraulic Oil

Section 9 – Physical And Chemical Properties

Appearance/Physical State	Amber liquid	Flash Point	>300 °F
Specific Gravity (Water=1)	See Data Sheet	Upper/Lower Flammability Limits (Vol. %)	Not Determined
pH	Not Applicable	Auto-ignition Temperature	Not Determined
Solubility in Water	Negligible	Decomposition Temperature	Not Determined
Odor	Petroleum	Vapor Pressure	Not Determined
Odor Threshold	Not Determined	Vapor Density (Air=1)	>1
Melting/Freezing Point	Not Determined	Partition Coefficient (n-octanol/water)	Not Determined
Boiling Range	Not Determined	Viscosity	See Data Sheet
Initial Boiling Point	Not Determined	Critical Temperature	Not Determined
Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Those should be requested separately.			

Section 10 – Stability And Reactivity

Reactivity	Does not react under normal conditions of use.
Chemical Stability	Stable under normal conditions of use.
Stability/Incompatibility	Avoid contact with strong oxidizers.
Conditions to Avoid	Open flame or sources of ignition.
Hazardous Reactions/Decomposition Products	Does not decompose under normal conditions; combustion may produce CO, CO ₂ , volatile hydrocarbons and other possibly toxic gases.

Section 11 – Toxicological Information

Likely Routes of Exposure	Inhalation, skin, eyes
Acute Effects	Product not tested. Based on components the effects of skin contact, inhalation and ingestion are expected to be mild. Some temporary eye irritation may occur. Refer to

Product Name : GREENLEE Hydraulic Oil

Chronic Effects	Sections 2 and 4 for recommended actions. Any acute symptoms may be aggravated. Refer to Sections 2 and 4 for recommended actions.
Symptoms	Prolonged or repeated exposure may cause redness, drying, or cracking of the skin, eye irritation, gastrointestinal and respiratory discomfort. Refer to Sections 2 and 4 for recommended actions.
Carcinogenicity	No components of this product are found to be carcinogens by NTP, IARC or OSHA.

Section 12 – Ecological Information

Ecotoxicity	Not Determined
Persistence and Biodegradability	Not Determined
Bioaccumulative Potential	Not Determined
Mobility in Soil	Not Determined

Section 13 – Disposal Consideration

Dispose of this product in compliance with all applicable federal, state and local regulations.

Section 14 – Transportation Information

DOT	Not Regulated
UN Proper Shipping Name/Number	Not Regulated

Section 15 – Regulatory Information

Chemical Inventory Lists	All ingredients are listed on TSCA and DSL
SARA (311/312) Reportable Hazard Categories	None
SARA 313 Ingredients	None



Product Name : GREENLEE Hydraulic Oil

Section 16 – Other Information

Prepared by:..... GREENLEE TOOLS, INC.

Operating Standard..... 6-603

Revision C

EC Number 002871

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GREENLEE TOOL BELIEVES THE STATEMENTS, TECHNICAL INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE RELIABLE BUT THEY ARE GIVEN WITHOUT WARRANTY OR GUARANTEE OF ANY KIND, EXPRESSED OR IMPLIED, AND WE ASSUME NO RESPONSIBILITY FOR ANY LOSS, DAMAGE OR EXPENSE, DIRECT OR CONSEQUENTIAL, ARISING OUT OF THEIR USE.

Fiche des données de sécurité

Section 1 – Identification du produit et du fournisseur

Nom du produit :	GREENLEE Hydraulic Oil
N° de catalogue du produit :	4016GB et 4017GB
Références du produit :	90510593 (gallon) ; 90508608 (quart)
Utilisation recommandée :	Prévu pour le matériel hydraulique Greenlee
Limites d'utilisation :	Utilisation industrielle uniquement
Fournisseur :	

<u>Amérique du Nord</u> GREENLEE TOOLS, INC. 4456 Boeing Drive Rockford, Illinois 61109-2932 1-800-435-0786 (8h à 17h CST, du lundi au vendredi) Numéro d'urgence Composer le 9-1-1 ou le numéro d'urgence local www.Greenlee.com	<u>Canada</u> Emerson Electric Canada Limited 66 Leek Crescent, Richmond Hill, Ontario L4B 1H1 906-762-1010

Révision :	C
Date de publication :	12 janvier 2024

Nom du produit : GREENLEE Hydraulic Oil

Section 2 – Identification des dangers

UREGENCES (aperçu)				
		HMIS		
Classification GHS		Santé	1	
Dangers physiques	Non classifié	Inflammabilité	1	
		Danger physique	0	
Dangers pour la santé et l'environnement	Voir ci-dessous	Protection individuelle	Voir Section 8	
Mot clé	AVERTISSEMENT			

Dangers pour la santé et l'environnement**Blessure ou irritation oculaire** Catégorie 2B – Provoque des irritations oculaires.**Avertissements**

Se laver soigneusement après manipulation.

En cas d'atteinte oculaire : Rincer soigneusement avec de l'eau pendant quelques minutes. Si possible, enlever d'éventuelles lentilles. Continuer le rinçage.**Si l'irritation oculaire persiste** : Consulter les services médicaux.**Section 3 – Composition/information sur les composants**

Composant	Numero CAS	Pourcentage
Huile minérale	64742-65—0	>90

Section 4 – Premiers soins**Contact cutané**

Normalement, aucuns premiers soins ne sont nécessaires. Retirer les vêtements contaminés. Laver la peau exposée au produit avec de l'eau et du savon. Laver les vêtements avant leur réutilisation. Consulter les services médicaux en cas d'irritation persistante.

Contact oculaire

Elever les lentilles. Rincer avec de l'eau jusqu'à élimination de toutes traces du produit. Eloigner les paupières des yeux pour parfaire le rinçage. Consulter les services médicaux si l'irritation persiste.

Nom du produit : GREENLEE Hydraulic Oil

Inhalation	Eloigner l'individu atteint de la source d'exposition. Faire appel aux services médicaux si le malaise persiste.
Ingestion	Ne pas provoquer de vomissement en raison des risques d'inhalation. En cas de vomissement spontanée, s'assurer qu'il n'y a pas de difficulté respiratoire. Consulter les services médicaux.

Section 5 – Mesures à prendre en cas d'incendie

Principes de lutte contre l'incendie	Traiter l'incendie comme incendie pétrolifère. Ne pas utiliser de jet d'eau haute pression. Utiliser un extincteur à eau, à poudre, à mousse ou au CO ₂ pour éteindre l'incendie. Arroser les conteneurs et les structures exposées au feu avec de l'eau pour les refroidir, et le personnel pour le protéger. Les pompiers exposés devraient porter des respirateurs autonomes homologués MSHA/NIOSH avec masque intégral et équipements de protection individuelle. Chasser les déversements à l'écart de la source d'allumage.
Dangers d'incendie et d'explosion inhabituels	Combustible à hautes températures. Substances irritantes ou toxiques peuvent être émises.

Section 6 – Mesures à prendre en cas de déversements accidentels

Se reporter à la Section 8 : Contrôle d'exposition et protection individuelle

Mesures d'urgence	Isoler la zone de déversement et éloigner tout personnel non nécessaire. Respecter les précautions d'usage visant la sécurité et l'exposition du personnel.
Méthodes de confinement et de nettoyage des déversements et fuites	Les sols et les surfaces risquent d'être glissants. Bloquer à l'aide de sable ou autre matière non combustible. Rincer la zone à grande eau tant que l'effluent ne risque pas d'atteindre les réseaux d'eaux pluviales ou usées. Sinon, utiliser des matériaux absorbants pour éponger et recycler de manière

Nom du produit : GREENLEE Hydraulic Oil

appropriée.

Notification

Selon la réglementation fédérale des Etats-Unis, tout déversement qui laisse une pellicule luisante sur les eaux navigables doit être immédiatement signalé auprès du National Response Center (800/424-8802).

Section 7 – Manutention et stockage

Se reporter à la Section 8 : Contrôle d'exposition et protection individuelle

Manutention

Prévoir les équipements de protection appropriés. Eviter tout contact avec la peau, les yeux et les vêtements. Eviter d'en inhaler la vapeur ou la buée. Ne pas ingérer. Pour utilisation industrielle uniquement. Manipuler ce produit de manière hygiénique, y compris lors du changement ou du lessivage des vêtements de travail en fin d'opération. Consulter les services médicaux en cas de malaise après exposition au produit. Le conteneur d'expédition et de stockage n'est pas sensé être pressurisé. Ne pas pressuriser le conteneur pour le vider, car cela risque de le faire éclater avec une force explosive. Les conteneurs doivent être complètement égouttés et fermés avant d'être envoyés à un centre de reconditionnement ou de recyclage approprié. Les conteneurs vides risquent de renfermer des résidus ou des vapeurs. Ne pas couper, meuler, percer souder ou réutiliser les conteneurs.

Stockage

Stockez ce produit dans des conteneurs fermés entreposés dans des locaux bien ventilés et à l'abri de la chaleur, des sources de combustion et des produits incompatibles. Ne pas stocker dans des conteneurs non étiquetés. Les conteneurs vides risquent de renfermer des résidus ou des vapeurs

Nom du produit : GREENLEE Hydraulic Oil

Section 8 – Contrôle de l'exposition/protection individuelle

Composant	ACGIH TLV	OSHA PEL
Huile minérale	5 mg/m ³	5 mg/m ³
Contrôles techniques	Prévoir une ventilation suffisante pour maintenir l'exposition aux concentrations aériennes sous les limites d'exposition recommandées.	
Protection des yeux et du visage	Porter des lunettes de sécurité, voire une visière intégrale s'il y a risque d'éclaboussure.	
Protection de la peau	Le port de gants résistants à l'huile est conseillé pour éviter les contacts répétitifs.	
Protection respiratoire	Pas normalement requise. Un respirateur homologué NIOSH ou MSHA devrait être prévu face aux zones renfermant d'importantes concentrations de vapeur ou de buée d'huile.	

Section 9 – Propriétés physiques et chimiques

Apparence/état physique	Liquide ambré	Point d'éclair	>300 °F
Densité (eau = 1)	Voir fiche technique	Limites supérieure/inférieure d'inflammabilité (Vol. %)	Non déterminé
pH	Non applicable	Température d'auto-inflammation	Non déterminé
Solubilité dans l'eau	Négligeable	Température de décomposition	Non déterminé
Odeur	Pétrole	Pression de vapeur	Non déterminé
Seuil odorifique	Non déterminé	Densité de vapeur (air = 1)	>1
Point de fusion/congélation	Non déterminé	Coefficient de partage (n-octanol/eau)	Non déterminé
Plage d'ébullition	Non déterminé	Viscosité	Voir fiche technique
Point d'ébullition initial	Non déterminé	Température critique	Non déterminé

Nom du produit : GREENLEE Hydraulic Oil

Nota : Les propriétés physiques et chimiques ne sont indiquées que pour raisons de sécurité, de santé et de considérations environnementales, sans nécessairement représenter les caractéristiques actuel du produit. Ces caractéristiques devraient être demandées séparément.

Section 10 – Stabilité et réactivité

Réactivité	Ne réagit pas sous conditions d'utilisation normales.
Stabilité chimique	Stable sous conditions d'utilisation normales.
Stabilité/incompatibilité	Eviter le contact avec les oxydants puissants.
Conditions à éviter	Flammes ouvertes et sources d'allumage.
Réactions dangereuses/produits de décomposition	Ne décompose pas sous conditions normales ; sa combustion risque d'émettre du CO, du CO ₂ , des hydrocarbures volatiles et autres gaz potentiellement toxiques.

Section 11 – Données toxicologiques

Voies d'exposition probables	Inhalation, cutanée, oculaire
Effets aigus	Produit non testé. Basé sur les composants, ses effets en cas de contact cutané, d'inhalation et d'ingestion sont estimés légers. Une certaine irritation oculaire temporaire est possible. Se reporter aux Sections 2 et 4 pour les mesures conseillées.
Toxicité reproductive	Risque de nuire aux enfants allaitants.
Effets chroniques	Tout symptôme aigu risque d'être aggravé. Se reporter aux Sections 2 et 4 pour les mesures conseillées.
Symptômes	Une exposition prolongée ou répétée risque d'occasionner des rougeurs, dessèchements ou fissurations de la peau, des irritations oculaires, voire des malaises gastro-intestinaux ou respiratoires. Se reporter aux Sections 2 et 4 pour les mesures conseillées.
Cancérogénicité	Aucun composant de ce produit n'a été trouvé cancérogène par NTP, IARC ou OSHA.

Nom du produit : GREENLEE Hydraulic Oil

Section 12 – Données écologiques

Ecotoxicité	Non déterminé
Persistance et biodégradabilité	Non déterminé
Potentiel de bioaccumulation	Non déterminé
Mobilité dans le sol	Non déterminé

Section 13 - Recyclage

Le recyclage de ce produit doit se faire selon l'ensemble de la réglementation fédérale, régionale et locale applicable.

Section 14 - Transport

DOT	Non réglementé
Nom/numéro d'expédition NU	Non réglementé

Section 15 – Règlementation

Répertoires d'inventaire chimique	Tous ingrédients indiqués sur TSCA et DSL
Catégories des dangers reportables SARA (311/312)	Aucun
Ingrédients SARA 313	Aucun

Nom du produit : GREENLEE Hydraulic Oil

Section 16 – Autres informations

Rédigé par..... GREENLEE TOOLS, INC.

Norme applicable 6-603

Révision C

ECN..... 002871

Date de publication 12 janvier 2024

Dernière révision 22 juin 2023

Greenlee Tools considère que les affirmations, renseignements techniques et recommandations ci-présentes sont fiables, mais les avance sans garantie quelconque, formelle ou implicite, et n'accepte aucune responsabilité en cas de perte, de dommages ou de dépenses directes ou consécutives résultant de leur utilisation.

Sección 1 – Identificación del producto y de la empresa

Nombre del producto: GREENLEE Hydraulic Oil

N.º del catálogo de productos: 4016GB y 4017GB

N.º de ID del producto: 90510593 (galón); 90508608 (cuarto)

Uso recomendado: Para uso con equipamiento hidráulico de Greenlee

Restricciones de uso: Solo para uso industrial

Información de la empresa:

<u>Norteamérica</u> GREENLEE TOOLS, INC. 4455 Boeing Drive Rockford, Illinois 61109-2932 1-815-387-9547 (8:00 a. m. - 5:00 p. m. CST, L-V) Teléfono de emergencia Llamar al 9-1-1 o al número de emergencia local www.Greenlee.com	<u>Canadá</u> Emerson Electric Canada Limited 66 Leek Crescent, Richmond Hill, Ontario L4B 1H1 905-762-1010

Revisión: C

Fecha de publicación: 12 de enero de 2024

Nombre del producto: Aceite hidráulico GREENLEE

Sección 2 – Identificación de peligros

DESCRIPCIÓN GENERAL DE EMERGENCIAS				
		HMIS		
Clasificación GHS		SALUD	1	
Peligros físicos	No homologado	INFLAMABILIDAD	1	
		PELIGROS FÍSICOS	0	
Peligros medioambientales y para la salud	Consultar a continuación	PROTECCIÓN PERSONAL	Consultar la Sección 8	
Palabra clave	ADVERTENCIA			

Peligros medioambientales y para la salud**Irritación o daño ocular** Categoría 2B – Causa irritación ocular.**Notas de precaución**

Lavar a fondo después de la manipulación.

Si entra en contacto con los ojos: Enjuagar cuidadosamente con agua durante varios minutos. Retirar lentes de contacto si las hay y es fácil de hacer. Seguir enjuagando.**Si la irritación persiste:** Buscar atención médica.**Sección 3 – Composición/información sobre los componentes**

Componente	Número CAS	Porcentaje
Aceite de petróleo	64742-65-0	>90

Sección 4 – Medidas de primeros auxilios**Contacto con la piel**

Normalmente no se requieren primeros auxilios. Quitarse las prendas de ropa contaminadas. Lavar el área de contacto con agua y jabón. Lavar la ropa antes de reutilizarla. Si la irritación persiste, obtener atención médica.

Contacto con los ojos

Retirar las lentes de contacto. Lavar con agua hasta que no haya restos de material. Los párpados deben mantenerse alejados del globo ocular para asegurar un enjuague profundo. Si la irritación persiste, obtener atención médica.

Nombre del producto: Aceite hidráulico GREENLEE

Inhalación	Alejar a la persona afectada de la fuente de exposición. Si la molestia persiste, obtener atención médica.
Ingestión	No inducir el vómito por el riesgo de aspiración hacia los pulmones. Si se producen vómitos de forma espontánea, comprobar si hay dificultad para respirar. Obtener atención médica.

Sección 5 – Medidas para combatir incendios

Procedimientos básicos contra incendios

Tratar como un incendio de aceite. No utilizar chorro de agua. Utilizar rocío de agua, polvo químico, espuma o CO₂ para extinguir el fuego. Utilizar rocío de agua para enfriar recipientes y estructuras expuestas al fuego y para proteger al personal. Los bomberos expuestos deben usar un aparato de respiración autónomo aprobado por MSHA/NIOSH con máscara facial completa y equipo de protección completo. Enjuagar los derrames alejándolos de fuentes de ignición.

Peligros inusuales de incendio y explosión

Combustible a altas temperaturas. Pueden emanarse sustancias irritantes o tóxicas.

Sección 6 – Medidas en caso de derrames accidentales

Consultar la Sección 8: Controles de exposición y protección personal

Acción de emergencia	Aislar el área donde se produjo la fuga y mantener alejadas a las personas innecesarias. Actuar con cautela con respecto a la seguridad y la exposición del personal.
Procedimiento ante derrames/fugas	El suelo y las superficies pueden estar resbaladizos. Hacer un dique con arena u otro material no combustible. Lavar bien el área con agua siempre que no ingrese al desagüe ni al alcantarillado; utilizar material absorbente y desecharlo adecuadamente.

Nombre del producto: Aceite hidráulico GREENLEE

Notificación

Cualquier derrame o fuga que llegue al agua navegable y que cause un brillo visible sobre el agua debe notificarse de inmediato al Centro Nacional de Respuesta (800/424-8802), según lo requiere la ley federal de los EE. UU.

Sección 7 – Manipulación y almacenamiento

Consultar la Sección 8: Controles de exposición y protección personal

Manipulación

Utilizar el equipo de protección personal adecuado. Evitar el contacto con la piel, los ojos y la ropa. No respirar vapores o nieblas. No ingerir. Solo para uso industrial. Seguir buenas prácticas higiénicas al manipular el producto, como cambiar y lavar la ropa de trabajo después de su uso. Obtener atención médica si está expuesto y se siente mal. El contenedor de envío y almacenamiento no está diseñado para ser presurizado. No aplicar presión para vaciar el envase, ya que podría romperse con fuerza explosiva. Los envases deben drenarse completamente, cerrarse adecuadamente y devolverse rápidamente para el reacondicionamiento del tambor o bien ser desechados correctamente. Los envases vacíos pueden contener residuos o vapores. No cortar, esmerilar, perforar, soldar ni reutilizar envases.

Almacenamiento

Conservar el producto en envases cerrados, en una zona bien ventilada, lejos del calor, fuentes de ignición y otras sustancias incompatibles. No se debe guardar en un envase sin rotular. Los envases vacíos pueden contener residuos o vapores.

Nombre del producto: Aceite hidráulico GREENLEE

Sección 8 – Controles de exposición/Protección personal

Componente Aceite de petróleo	TLV de la ACGIH 5 mg/m ³	PEL de la OSHA 5 mg/m ³
Controles de ingeniería	Utilizar ventilación adecuada para mantener límites de concentración en el aire por debajo de los límites de exposición recomendados.	
Protección ocular y del rostro	Usar gafas de seguridad; utilizar un protector facial si es posible que haya salpicaduras.	
Protección de la piel	Deberán utilizarse guantes resistentes al aceite para evitar el contacto repetido.	
Protección respiratoria	No se necesita normalmente. Se debe utilizar un equipo de respiración aprobado por NIOSH o MSHA en áreas con altas concentraciones de vapor o niebla de aceite.	

Sección 9 – Propiedades físicas y químicas

Aspecto y estado físico	Líquido ámbar	Punto de inflamación	>300 °F
Gravedad específica (agua=1)	Consultar la Hoja de datos	Límites de inflamabilidad superior/inferior (vol. %)	Sin determinar
pH	No se aplica	Temperatura de autoignición	Sin determinar
Solubilidad en agua	Insignificante	Temperatura de descomposición	Sin determinar
Olor	Petróleo	Presión de vapor	Sin determinar
Umbral de olor	Sin determinar	Densidad de vapor (Aire=1)	>1
Temperatura de congelamiento/fusión	Sin determinar	Coeficiente de reparto (n-octanol/ agua)	Sin determinar
Intervalo de ebullición	Sin determinar	Viscosidad	Consultar la Hoja de datos
Punto inicial de ebullición	Sin determinar	Temperatura crítica	Sin determinar
Nota: Las propiedades físicas y químicas se proporcionan solo por consideraciones de seguridad, salud y medioambiente, y pueden no representar completamente las especificaciones del producto. Deben solicitarse por separado.			

Sección 10 – Estabilidad y reactividad

Nombre del producto: Aceite hidráulico GREENLEE

Reactividad	No reacciona en condiciones de uso normales.
Estabilidad química	Estable en condiciones de uso normales.
Estabilidad/incompatibilidad	Evitar el contacto con oxidantes fuertes.
Condiciones a evitar	Llama abierta o fuente de ignición.
Reacciones/Productos de descomposición peligrosos	No se descompone en condiciones normales; la combustión puede producir CO, CO ₂ , hidrocarburos volátiles y otros gases posiblemente tóxicos.

Sección 11 – Información toxicológica

Vías de exposición probables	Inhalación, piel, ojos
Efectos agudos	Producto no probado. Según los componentes, se espera que los efectos del contacto con la piel, inhalación e ingestión sean leves. Se puede producir cierta irritación ocular temporal. Consultar las acciones recomendadas en las Secciones 2 y 4.
Efectos crónicos	Los síntomas agudos pueden empeorar. Consultar las acciones recomendadas en las Secciones 2 y 4.
Síntomas	La exposición prolongada o repetida puede causar enrojecimiento, sequedad o agrietamiento de la piel, irritación ocular, molestias gastrointestinales y respiratorias. Consultar las acciones recomendadas en las Secciones 2 y 4.
Carcinogenicidad	No se ha determinado que ningún componente de este producto que sea una sustancia carcinogénica según NTP, IARC u OSHA.

Sección 12 – Información ecológica

Ecotoxicidad	Sin determinar
Persistencia y biodegradabilidad	Sin determinar
Potencial de bioacumulación	Sin determinar
Movilidad en el suelo	Sin determinar

Sección 13 – Consideraciones de desecho

Desechar este producto de acuerdo con todas las

Nombre del producto: Aceite hidráulico GREENLEE

normas federales, estatales y locales aplicables.

Sección 14 – Información de transporte

DOT	No está reglamentado
Nombre/Número de envío correcto de la ONU:	No está reglamentado

Sección 15 – Información normativa

Listas de inventario de productos químicos	Todos los componentes figuran en TSCA y DSL
Categorías de peligros que se deben informar según SARA (311/312)	Ninguno
Componentes según SARA 313	Ninguno

Nombre del producto: Aceite hidráulico GREENLEE

Sección 16 – Otra información

Preparado por: GREENLEE TOOLS, INC.

Norma operativa..... 6-603

Revisión C

Número EC 002871

Fecha de publicación 12 de enero de 2024

Fecha de última revisión 22 de junio de 2023

GREENLEE TOOL CONSIDERA QUE LAS DECLARACIONES, LA INFORMACIÓN TÉCNICA Y LAS RECOMENDACIONES CONTENIDAS EN ESTE DOCUMENTO SON CONFIABLES, PERO SE OFRECEN SIN GARANTÍA DE NINGÚN TIPO, EXPRESA O IMPLÍCITA, Y NO ASUMIMOS NINGUNA RESPONSABILIDAD POR PÉRDIDAS, DAÑOS O GASTOS, DIRECTOS O INDIRECTOS, DERIVADOS DE SU USO.



Revision:
C

Date of issue: 08-07-18

Page: 1/10

Trade name: Noalox® Anti Oxidant

SECTION 1: Identification

Product identifier:	Noalox® Anti Oxidant.
Synonyms:	None available.
Product Code Number:	30-024, 30-026, 30-030, 30-031, 30-032, 30-040.
SDS number:	ID019
Recommended use:	Anti oxidant.
Recommended restrictions:	Uses other than those recommended.

Manufacturer/Importer/Supplier/Distributor information:

Company Name:	IDEAL INDUSTRIES, INC.
Company Address:	Becker Place, Sycamore, IL 60178
Company Telephone:	Office hours (Mon – Fri) 7AM - 5 PM (CDT) (815)895-5181
Company Contact Email:	IDEAL@IDEALINDUSTRIES.COM
Emergency phone number:	24 HOUR EMERGENCY NUMBER: (815)895-5181.

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:

Physical hazards

Not classified as a physical hazard under GHS criteria.

Health hazards

Not classified as a physical hazard under GHS criteria.

Environmental hazards

Not classified as a physical hazard under GHS criteria.

GHS Signal word:	Not applicable.

GHS Hazard statement(s):	Not applicable.

GHS Hazard symbol(s):	Not applicable

GHS Precautionary statement(s):

Prevention: No prevention precautionary statements required.

Response: No response precautionary statements required.

Storage: No storage precautionary related statements required.

Disposal: No disposal precautionary statements required.

**Hazard(s) not otherwise
Classified (HNOC):**

None known.

Percentage of ingredient(s) of unknown acute toxicity:
Not applicable.

SECTION 3: Composition/information on ingredients

Mixture:

Chemical name	CAS#	Concentration (weight %)
Zinc Dust	7440-66-6	15 - 20 %
Hydrophillic Fumed Silica	7631-86-9	1 – 5%

Note: The balance of the ingredients are not classified as hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

SECTION 4: First-aid Measures

Description of necessary measures:

Inhalation: If inhaled, move to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms persist.

Skin contact: Immediately remove excess chemical and contaminated clothing; thoroughly wash contaminated skin with mild soap and water. If irritation persists after washing seek medical attention. Clean contaminated clothing before reuse.

Eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if symptoms persist.

Ingestion: Induce vomiting and consult physician or local poison control center.

Most important symptoms/effects, acute and delayed: None expected.

Indication of immediate medical attention and special treatment needed: If any symptoms are observed, contact a physician and give them this SDS sheet. If exposed or concerned: Get medical advice/attention.

SECTION 5: Fire-fighting measures

Suitable extinguishing media: Use dry chemical, carbon dioxide or foam.

Unsuitable extinguishing media: Do not use water. Water reacts with zinc dust.

Specific hazards arising from the chemical: Water or foam may cause a frothing reaction. Combustion products - Carbon monoxide, Carbon dioxide.

Special protective equipment and precautions for fire-fighters: For fire involving this material, do not enter any enclosed or confined fire space without proper protective equipment. Use self-contained breathing apparatus with full face shield to protect against the hazardous effects of combustion products and oxygen deficiencies. Keep fire exposed containers cool with water.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Methods and material for containment and cleaning up:

Ventilate area. Collect for disposal. Clean up remaining materials from spill with suitable absorbent. Clean area as appropriate since some material, even in small quantities; may present a slip hazard. Observe all personal protection equipment recommendations.

SECTION 7: Handling and Storage

Precautions for safe handling: Wash thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Conditions for safe storage, including any incompatibles: Keep away from children, infants and pets. Keep in dry location. Keep container(s) tightly closed and properly labeled. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Store in dry conditions at temperatures between 40 - 120 F.

"Empty" containers retain residue and may be dangerous. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

SECTION 8: Exposure controls/personal protection

Control Parameters:

Occupational exposure limits:

US OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200): Permissible Exposure Limits		
Substance	PEL-TWA (8 hour)	PEL-STEL (15 min)
Zinc Dust	No data available	No data available
Hydrophillic Fumed Silica	80 mg/m ³ /(% SiO ₂)	No data available

US ACGIH Threshold Limit Values		
Substance	TLV-TWA (8 hour)	TLV-STEL (15 min)
Zinc Dust	No data available	No data available
Hydrophillic Fumed Silica	No data available	No data available

NIOSH Exposure Limits		
Substance	TWA	STEL
Zinc Dust	No data available	No data available
Hydrophillic Fumed Silica	6 mg/m ³	No data available

Appropriate engineering controls: General (mechanical) room ventilation is expected to be adequate. Special local ventilation is recommended to keep dust below exposure limits.

Individual protection measures, such as personal protective equipment:

Eye/face protection: The use of OSHA compliant safety glasses or splash goggles are recommended.

Skin and Hand protection: None normally required. Use neoprene gloves if necessary.

Respiratory protection: None required

Other: An eye fountain in work area is recommended.

Thermal hazards: No data available.

SECTION 9: Physical and chemical properties

Appearance

Physical state:	Paste
Form:	Gray solid paste.
Color:	Gray.
Odor:	Mild odor.
Odor threshold:	No data available
pH:	6.5 – 8.0
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	> 500°F
Flash point:	310°F
Evaporation rate:	No data available
Flammability (solid, gas):	Not applicable
Upper/lower flammability or explosive limits	
Flammability limit – lower (%):	Not applicable
Flammability limit – upper (%):	Not applicable
Explosive limit – lower (%):	Not applicable
Explosive limit – upper (%):	Not applicable
Vapor pressure:	No data available
Vapor density:	No data available
Relative Density:	1.04
Solubility(ies):	Moderate.
Partition coefficient (n-octanol/water):	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available
Other information:	
% Volatile by volume:	None
Percent solids by weight:	~ 100%

SECTION 10: Stability and Reactivity

Reactivity:	Not chemically reactive.
Chemical stability:	Stable under normal ambient and anticipated conditions of use.
Possibility of hazardous reactions:	Hazardous reactions not anticipated.
Conditions to avoid:	Avoid conditions of moisture or high humidity.
Incompatible materials:	Avoid strong oxidizers, strong acids and water.
Hazardous decomposition Products:	Excessive heat and burning may release oxides of carbon.

SECTION 11: Toxicological information

Information on likely routes of exposure:	
Inhalation:	Not an expected route of entry.
Ingestion:	Not an expected route of entry.

Skin: Skin contact is a potential route of entry.
Eyes: Not an expected route of entry.

Symptoms related to the physical, chemical, and toxicological characteristics:
None normally expected.

Delayed and immediate effects and chronic effects from short or long-term exposure:
Upon prolonged contact, may cause temporary eye discomfort and damage to organs.

Numerical measures of toxicity:

Ingredient Information:

Substance	Test Type (species)	Value
Zinc Dust	LD ₅₀ Oral (Rat)	No data available
	LD ₅₀ Dermal (Rabbit)	No data available
	LC ₅₀ Inhalation	No data available
Hydrophilic Fumed Silica	LD ₅₀ Oral (Rat)	3160 mg/kg
	LD ₅₀ Intravenous (Rat)	15 mg/kg
	LC ₅₀ Inhalation (Rat)	> 200 gm/m ³ (1H)

Product Acute Toxicity Estimates:

Acute Oral Toxicity – no data available
Acute Dermal Toxicity - no data available
Acute Inhalation Toxicity - no data available

Skin corrosion/irritation: No information available on the mixture, however none of the components have been classified to cause skin corrosion/irritation (or are below the concentration threshold for classification).

Serious eye damage/eye irritation: No information available on the mixture, however none of the components have been classified to cause eye damage/irritation (or are below the concentration threshold for classification).

Respiratory sensitization: No information available on the mixture, however none of the components have been classified as a respiratory sensitizer (or are below the concentration threshold for classification).

Skin sensitization: No information available on the mixture, however none of the components have been classified as a skin sensitizer (or are below the concentration threshold for classification).

Germ cell mutagenicity:	No information available on the mixture, however none of the components have been classified for germ cell mutagenicity (or are below the concentration threshold for classification).
Carcinogenicity:	No information available on the mixture, however none of the components are listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.
Reproductive toxicity:	No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).
Specific target organ toxicity- Single exposure:	No information available on the mixture, however none of the components have been classified for STOT SE (or are below the concentration threshold for classification).
Specific target organ toxicity- Repeat exposure:	No information available on the mixture, however Hydrophilic Fumed Silica has been classified for STOT RE and may cause damage to organs over prolonged periods.
Aspiration hazard:	No information available on the mixture, however none of the components have been classified for aspiration hazard (or are below the concentration threshold for classification).
Further information:	No data available.

SECTION 12: Ecological information

Ecotoxicity:

Product data: No data available

Ingredient Information:

Substance	Test Type	Species	Value
Zinc Dust	LC ₅₀	Fish	No data available
	LC ₅₀	Aquatic crustacea	No data available
	EC ₅₀	Algae	No data available
Hydrophilic Fumed Silica	LC ₅₀	Fish	No data available
	LC ₅₀	Aquatic crustacea	No data available
	EC ₅₀	Algae	No data available

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Disposal instructions:

This product, in its present state, when discarded or disposed of, may be a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.

See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties.

SECTION 14: Transport Information

US Department of Transportation Classification (49CFR)

This material is not classified as dangerous under DOT regulations

IMDG

This material is not classified as dangerous under IMDG regulations.

IATA (Country variations may apply)

This material is not classified as dangerous under IATA regulations

Environmental hazards

Marine pollutant: No.

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

No further relevant information available.

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.

None.

SECTION 15: Regulatory Information

Safety, health and environmental regulations specific for the product.

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is not hazardous under OSHA.

Toxic Substances Control Act (TSCA) – All substances in this product are listed, as required, on the TSCA inventory.

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311, 312 and 313:

Section 302 – No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

CERCLA Hazardous Substance List, 40 CFR 302.4:

None listed.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None listed.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): None listed.

SARA Title III

Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A): None listed.

Section 311/312 (40 CFR 370):

Acute Health Hazard: No

Chronic Health Hazard: No

Fire Hazard: No

Pressure Hazard: No

Reactivity Hazard: No

Section 313 Toxic Release Inventory (40 CFR 372):

This product contains the following materials that are subject to the reporting requirements of Section 313 of EPCRA: Zinc powder (stabilized).

STATE REGULATIONS:

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986): No components are listed on Prop 65.

Massachusetts Right to Know: Zinc powder (stabilized) and Silicon dioxide are listed on the Massachusetts Right to Know List.

New Jersey Right to Know: Zinc powder (stabilized) and Silicon dioxide are listed on the New Jersey Right to Know list.

Pennsylvania Right to Know: Zinc powder (stabilized) and Silicon dioxide are listed on the Pennsylvania Right to Know List.

Canada WHMIS Hazard Class: D2B – Very Toxic Material

SECTION 16: Other information, including date of preparation or last revision.

Revision Date: July 05, 2016

To the best of our knowledge, the information contained herein is accurate. However IDEAL INDUSTRIES INC. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

SAFETY DATA SHEET

RDMI1001A

Section 1. Identification

Product name : KRYLON® MARK-IT® Inverted Marking Paint
Red Fluorescent

Product code : RDMI1001A

Other means of identification : Not available.

Product type : Aerosol.

Relevant identified uses of the substance or mixture and uses advised against

Paint or paint related material.

Manufacturer : Krylon Products Group
101 W. Prospect Avenue
Cleveland, OH 44115

Emergency telephone number of the company : US / Canada: (216) 566-2917
Mexico: SETIQ 800-00-214-00 / 55-5559-1588 Available 24 hours and 365 days a year

Product Information Telephone Number : US / Canada: (800) 457-9566
Mexico: Not Available

Regulatory Information Telephone Number : US / Canada: (216) 566-2902
Mexico: Not Available

Transportation Emergency Telephone Number : US / Canada: (216) 566-2917
Mexico: SETIQ 800-00-214-00 / 55-5559-1588 Available 24 hours and 365 days a year

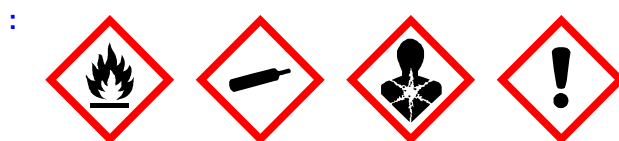
Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE AEROSOLS - Category 1
GASES UNDER PRESSURE - Compressed gas
TOXIC TO REPRODUCTION - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1
Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 18.7% (oral), 28.5% (dermal), 18.7% (inhalation)

GHS label elements

Hazard pictograms



Signal word : Danger

Date of issue/Date of revision : 10/27/2021 **Date of previous issue** : 9/29/2021

RDMI1001A KRYLON® MARK-IT® Inverted Marking Paint
Red Fluorescent

Version : 16.02 1/16

SHW-85-NA-GHS-US

Section 2. Hazards identification

- Hazard statements** : Extremely flammable aerosol.
Contains gas under pressure; may explode if heated.
May be fatal if swallowed and enters airways.
May cause respiratory irritation.
May cause drowsiness or dizziness.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.
- Precautionary statements**
- General** : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.
- Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Use only outdoors or in a well-ventilated area. Do not breathe dust or mist. Pressurized container: Do not pierce or burn, even after use.
- Response** : IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting.
- Storage** : Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Store in a well-ventilated place. Keep container tightly closed.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Please refer to the SDS for additional information. Keep out of reach of children. Keep upright in a cool, dry place. Do not discard empty can in trash compactor.
- Hazards not otherwise classified** : DANGER: Rags, steel wool, other waste soaked with this product, and sanding residue may spontaneously catch fire if improperly discarded. Immediately place rags, steel wool, other waste soaked with this product, and sanding residue in a sealed, water-filled, metal container. Dispose of in accordance with local fire regulations.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

CAS number/other identifiers

Ingredient name	% by weight	CAS number
Toluene	<10	108-88-3
Propane	≤10	74-98-6
Light Aliphatic Hydrocarbon	≤10	64742-47-8
Butane	≤5	106-97-8
Lt. Aliphatic Hydrocarbon Solvent	≤3	64742-89-8

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Date of issue/Date of revision : 10/27/2021	Date of previous issue : 9/29/2021	Version : 16.02	2/16
RDMI1001A	KRYLON® MARK-IT® Inverted Marking Paint Red Fluorescent	SHW-85-NA-GHS-US	

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
irritation
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 4. First aid measures

- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

- Specific hazards arising from the chemical** : Extremely flammable aerosol. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Section 6. Accidental release measures

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Protect from sunlight. Store locked up. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits (OSHA United States)

Section 8. Exposure controls/personal protection

Ingredient name	CAS #	Exposure limits
Toluene	108-88-3	OSHA PEL Z2 (United States, 2/2013). TWA: 200 ppm 8 hours. CEIL: 300 ppm AMP: 500 ppm 10 minutes. NIOSH REL (United States, 10/2020). TWA: 100 ppm 10 hours. TWA: 375 mg/m ³ 10 hours. STEL: 150 ppm 15 minutes. STEL: 560 mg/m ³ 15 minutes. ACGIH TLV (United States, 1/2021). Ototoxicant. TWA: 20 ppm 8 hours.
Propane	74-98-6	NIOSH REL (United States, 10/2020). TWA: 1000 ppm 10 hours. TWA: 1800 mg/m ³ 10 hours. OSHA PEL (United States, 5/2018). TWA: 1000 ppm 8 hours. TWA: 1800 mg/m ³ 8 hours. ACGIH TLV (United States, 1/2021). Oxygen Depletion [Asphyxiant]. Explosive potential.
Light Aliphatic Hydrocarbon	64742-47-8	ACGIH TLV (United States, 1/2021). Absorbed through skin. TWA: 200 mg/m ³ , (as total hydrocarbon vapor) 8 hours.
Butane	106-97-8	NIOSH REL (United States, 10/2020). TWA: 800 ppm 10 hours. TWA: 1900 mg/m ³ 10 hours. ACGIH TLV (United States, 1/2021). Explosive potential. STEL: 1000 ppm 15 minutes.
Lt. Aliphatic Hydrocarbon Solvent	64742-89-8	None.

Occupational exposure limits (Canada)

Ingredient name	CAS #	Exposure limits
Toluene	108-88-3	CA Alberta Provincial (Canada, 6/2018). Absorbed through skin. 8 hrs OEL: 50 ppm 8 hours. 8 hrs OEL: 188 mg/m ³ 8 hours. CA British Columbia Provincial (Canada, 1/2021). TWA: 20 ppm 8 hours. CA Ontario Provincial (Canada, 6/2019). TWA: 20 ppm 8 hours. CA Quebec Provincial (Canada, 7/2019). Absorbed through skin. TWAEV: 50 ppm 8 hours. TWAEV: 188 mg/m ³ 8 hours. CA Saskatchewan Provincial (Canada, 7/2013). Absorbed through skin. STEL: 60 ppm 15 minutes. TWA: 50 ppm 8 hours.
Normal propane	74-98-6	CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 1000 ppm 8 hours. CA Quebec Provincial (Canada, 7/2019).

Section 8. Exposure controls/personal protection

Petroleum refining, hydrotreated light distillate	64742-47-8	TWAEV: 1000 ppm 8 hours. TWAEV: 1800 mg/m³ 8 hours. CA Saskatchewan Provincial (Canada, 7/2013). STEL: 1250 ppm 15 minutes. TWA: 1000 ppm 8 hours. CA British Columbia Provincial (Canada, 1/2021). Oxygen Depletion [Asphyxiant]. Explosive potential. CA Ontario Provincial (Canada, 6/2019). Oxygen Depletion [Asphyxiant]. Explosive potential. CA British Columbia Provincial (Canada, 1/2021). Absorbed through skin. TWA: 200 mg/m³, (as total hydrocarbon vapour) 8 hours. CA Alberta Provincial (Canada, 6/2018). Absorbed through skin. 8 hrs OEL: 200 mg/m³, (as total hydrocarbon vapour) 8 hours. CA Ontario Provincial (Canada, 6/2019). Absorbed through skin. TWA: 200 mg/m³, (as total hydrocarbon vapour) 8 hours.
Butane	106-97-8	CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 1000 ppm 8 hours. CA Quebec Provincial (Canada, 7/2019). TWAEV: 800 ppm 8 hours. TWAEV: 1900 mg/m³ 8 hours. CA Saskatchewan Provincial (Canada, 7/2013). STEL: 1250 ppm 15 minutes. TWA: 1000 ppm 8 hours. CA British Columbia Provincial (Canada, 1/2021). Explosive potential. STEL: 1000 ppm 15 minutes. CA Ontario Provincial (Canada, 6/2019). Explosive potential. STEL: 1000 ppm 15 minutes.

Occupational exposure limits (Mexico)

	CAS #	Exposure limits
Toluene	108-88-3	NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 20 ppm 8 hours.
Propane	74-98-6	NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 1000 ppm 8 hours.
Light Aliphatic Hydrocarbon	64742-47-8	ACGIH TLV (United States, 1/2021). Absorbed through skin. TWA: 200 mg/m ³ , (as total hydrocarbon vapor) 8 hours.
Butane	106-97-8	NOM-010-STPS-2014 (Mexico, 4/2016). TWA: 1000 ppm 8 hours.

Section 8. Exposure controls/personal protection

Appropriate engineering controls	: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
Environmental exposure controls	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
<u>Individual protection measures</u>	
Hygiene measures	: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
<u>Skin protection</u>	
Hand protection	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Body protection	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
Other skin protection	: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state	: Liquid.
Color	: Not available.
Odor	: Not available.
Odor threshold	: Not available.
pH	: 7
Melting point/freezing point	: Not available.
Boiling point, initial boiling point, and boiling range	: Not available.

Date of issue/Date of revision	: 10/27/2021	Date of previous issue	: 9/29/2021	Version	: 16.02	8/16
RDMI1001A	KRYLON® MARK-IT® Inverted Marking Paint Red Fluorescent				SHW-85-NA-GHS-US	

Section 9. Physical and chemical properties

Flash point	: Closed cup: -29°C (-20.2°F) [Pensky-Martens Closed Cup]
Evaporation rate	: 2 (butyl acetate = 1)
Flammability	: Not available.
Lower and upper explosion limit/flammability limit	: Lower: 0.9% Upper: 9.5%
Vapor pressure	: 101.3 kPa (760 mm Hg)
Relative vapor density	: 1 [Air = 1]
Relative density	: 0.86
Solubility	: Not available.
Partition coefficient: n-octanol/water	: Not applicable.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic (40°C (104°F)): <20.5 mm ² /s (<20.5 cSt)
Molecular weight	: Not applicable.
<u>Aerosol product</u>	
Type of aerosol	: Spray
Heat of combustion	: 13.193 kJ/g

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame).
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Toluene	LC50 Inhalation Vapor	Rat	49 g/m ³	4 hours
Butane	LD50 Oral	Rat	636 mg/kg	-
	LC50 Inhalation Vapor	Rat	658000 mg/m ³	4 hours

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
Toluene	Eyes - Mild irritant	Rabbit	-	0.5 minutes	-
	Eyes - Mild irritant	Rabbit	-	100 mg	-
	Eyes - Severe irritant	Rabbit	-	870 ug	-
	Skin - Mild irritant	Pig	-	24 hours 2 mg	-
				24 hours 250 uL	-
	Skin - Mild irritant	Rabbit	-	435 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
	Skin - Moderate irritant	Rabbit	-	500 mg	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Toluene	-	3	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Toluene	Category 3	-	Respiratory tract irritation
Propane	Category 3	-	Narcotic effects
	Category 3		Respiratory tract irritation
Light Aliphatic Hydrocarbon	Category 3	-	Narcotic effects
	Category 3		Respiratory tract irritation
Butane	Category 3	-	Narcotic effects
	Category 3		Respiratory tract irritation
Lt. Aliphatic Hydrocarbon Solvent	Category 3	-	Narcotic effects
	Category 3		Respiratory tract irritation
	Category 3		Narcotic effects

Specific target organ toxicity (repeated exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
Toluene	Category 2	-	-
Propane	Category 2	-	-
Light Aliphatic Hydrocarbon	Category 2	-	-
Butane	Category 2	-	-
Lt. Aliphatic Hydrocarbon Solvent	Category 2	-	-

Aspiration hazard

Name	Result
Toluene	ASPIRATION HAZARD - Category 1
Propane	ASPIRATION HAZARD - Category 1
Light Aliphatic Hydrocarbon	ASPIRATION HAZARD - Category 1
Butane	ASPIRATION HAZARD - Category 1
Lt. Aliphatic Hydrocarbon Solvent	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
irritation
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Date of issue/Date of revision : 10/27/2021	Date of previous issue : 9/29/2021	Version : 16.02	11/16
RDMI1001A	KRYLON® MARK-IT® Inverted Marking Paint Red Fluorescent	SHW-85-NA-GHS-US	

Section 11. Toxicological information

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : May cause damage to organs through prolonged or repeated exposure.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : Suspected of damaging the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	5293.29 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Toluene	Acute EC50 >433 ppm Marine water	Algae - Skeletonema costatum	96 hours
	Acute EC50 11600 µg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
	Acute EC50 6000 µg/l Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
		Fish - Oncorhynchus kisutch - Fry	96 hours
	Acute LC50 5500 µg/l Fresh water	Daphnia - Daphnia magna	21 days
Light Aliphatic Hydrocarbon	Chronic NOEC 1000 µg/l Fresh water	Fish - Lepomis macrochirus	4 days
	Acute LC50 2200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
Lt. Aliphatic Hydrocarbon Solvent	Acute LC50 >100000 ppm Fresh water		

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Toluene	-	-	Readily

Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
Toluene Lt. Aliphatic Hydrocarbon Solvent	- -	90 10 to 2500	low high

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	UN1950	UN1950	UN1950	UN1950	UN1950
UN proper shipping name	AEROSOLS	AEROSOLS	AEROSOLS	AEROSOLS, flammable	AEROSOLS
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.
Additional information	- ERG No. 126	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2). ERG No. 126	- ERG No. 126	-	Emergency schedules F-D, S-U

Section 14. Transport information

	Dependent upon container size, this product may ship under the Limited Quantity shipping exception.	Dependent upon container size, this product may ship under the Limited Quantity shipping exception.	Dependent upon container size, this product may ship under the Limited Quantity shipping exception.	Dependent upon container size, this product may ship under the Limited Quantity shipping exception.	Dependent upon container size, this product may ship under the Limited Quantity shipping exception.

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to IMO instruments : Not available.

Proper shipping name : Not available.

Section 15. Regulatory information

SARA 313

SARA 313 (40 CFR 372.45) supplier notification can be found on the Environmental Data Sheet.

California Prop. 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

International regulations

International lists

: **Australia inventory (AIIIC)**: Not determined.
China inventory (IECSC): Not determined.
Japan inventory (CSCL): Not determined.
Japan inventory (ISHL): Not determined.
Korea inventory (KECI): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan Chemical Substances Inventory (TCSI): Not determined.
Thailand inventory: Not determined.
Turkey inventory: Not determined.
Vietnam inventory: Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	3
Flammability		2
Physical hazards		3

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

Procedure used to derive the classification

Date of issue/Date of revision	: 10/27/2021	Date of previous issue	: 9/29/2021	Version	: 16.02	14/16
RDMI1001A	KRYLON® MARK-IT® Inverted Marking Paint Red Fluorescent				SHW-85-NA-GHS-US	

Section 16. Other information

Classification	Justification
FLAMMABLE AEROSOLS - Category 1	On basis of test data
GASES UNDER PRESSURE - Compressed gas	Calculation method
TOXIC TO REPRODUCTION - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method
ASPIRATION HAZARD - Category 1	Calculation method

History

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Version : 16.02

Key to abbreviations :

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- N/A = Not available
- SGG = Segregation Group
- UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by the manufacturer, including but not limited to the incorporation of products not specified by the manufacturer, or the use or addition of products in proportions not specified by the manufacturer. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.



CEMENT & CONCRETE PRODUCTS™

C1: Portland Cement Based Concrete Products

SAFETY DATA SHEET

(Complies with OSHA 29 CFR 1910.1200)

SECTION I: PRODUCT IDENTIFICATION

The QUIKRETE® Companies
5 Concourse Parkway, Suite 1900
Atlanta, GA 30328

Emergency Telephone Number
INFOTRAC (800) 535-5053
Information Telephone Number
(800) 282-5828

SDS C1

Revision: Feb-23

QUIKRETE® Product Name

Item #(s)

Fence Post Mix	1005
Fiber-Reinforced Concrete Mix	1006
Crack Resistant Concrete Mix	1006-80, -50
Pro-Finish Crack Resistant Concrete Mix	1006-68
QUIKRETE 5000 Concrete Mix	1007-80, -50
QUIKRETE 6000 Concrete Mix	1007
Pro-Finish QUIKRETE 5000	1007-85
Lightweight Concrete Mix	1008
Basic Concrete Mix	1015
Maximum Yield Concrete Mix	1100-80
Concrete Mix	1101-10, -20, -40, -60, -80, -90
Green Concrete Mix	1101-63, -73
B-Crete	1101-81
Red-E-Crete Concrete mix	1101-91, -87; 1141-62, -63, -92, -93, Bulk NR810035
Countertop Mix	1106-80
Form & Pour Concrete Mix MS	1120-80/NR810065
All-Star Concrete Mix	1121
Rip Rap	1129
Rip Rap Scrim	1134-80
Handicrete Concrete Mix	1141-59, -60, -80
RiteMix Concrete	1171-60
Fiber Reinforced Deck Mix	1251-80, -81
All-Star Crack Resistant Concrete Mix	1470-03
All-Star 5000 Concrete Mix	1470-01
Moxcrete	40810015
FlowCrete 5000 (Mix 801)	8080026/NR80026
Mix 801 Concrete Mix	NR81001

Product Use: Portland cement-based, aggregated products for general construction

SDS C1

QUIKRETE Companies, LLC

2/10/2023

See most current revision of this document at www.QUIKRETE.com.

SECTION II - HAZARD IDENTIFICATION

Hazard-determining components of labeling: Silica, Portland cement

2.1 Classification of the substance or mixture

Carcinogen – Category 1A

Skin Corrosion – Category 1B

Eye Damage – Category 1

Skin Sensitization – Category 1B

Specific Target Organ Toxicity Repeat Exposure – Category 1

Specific Target Organ Toxicity: Single Exposure – Category 3

2.2a Signal word DANGER!

2.2b Hazard Statements

May cause cancer through chronic inhalation

Causes severe skin burns and serious eye damage

May cause an allergic skin reaction

Causes damage to lungs through prolonged or repeated inhalation

May cause respiratory irritation

Harmful if swallowed.

2.2c Pictograms



2.2d Precautionary statements

Do not handle until all safety precautions have been read and understood.

Wear impervious gloves, such as nitrile. Wear eye protection, protective clothing and rubber boots.

Do not eat, drink or smoke when using this product.

Wash thoroughly after handling.

Use only in a well-ventilated area. Wear a NIOSH approved respirator (mask) such as N95 in poorly ventilated areas, when used for extended periods, when use is frequent, or when permissible exposure limits may be exceeded.

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Do not breathe dust.

If swallowed: Rinse mouth. Do NOT induce vomiting.

If inhaled: Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If on skin (or hair): Remove immediately all contaminated clothing and wash before re-use. Rinse skin or hair with water.

If significant skin irritation or rash occurs: get medical attention.

Immediately seek medical attention if symptoms are significant or persist.

Store in a well-ventilated place. Keep container tightly closed.

Dispose of contents/containers in accordance with all regulations.

2.3 Additional Information

The Portland cement in this product can cause serious, potentially irreversible damage to skin, eye, respiratory and digestive tracts due to chemical (caustic) burns, including third degree burns.

Burns from Portland cement may not cause immediate pain or discomfort. You cannot rely on pain to alert you to cement burns. Portland cement can cause dermatitis or sensitization. Therefore precautions must be taken to prevent all contact with Portland cement. Cement burns can become worse even after contact has ended. If there is contact with this product, immediately remove all product from body and thoroughly rinse with water. If you experience or suspect a cement burn or inflammation you should immediately see a health care professional.

Skin burns and irritation may be caused by brief exposure, though often are caused by extended exposure of 15 minutes, an hour, or longer. Interaction of Portland cement with water or sweat releases a caustic solution which produces the burns or irritation. Any extended exposure should be treated as though a burn has occurred until determined otherwise.

Skin contact with Portland cement can also cause inflammation of the skin, referred to as dermatitis. Signs and symptoms of dermatitis can include itching, redness, swelling, blisters, scaling, and other changes in the normal condition of the skin. Signs and symptoms of burns include the above and whitening, yellowing, blackening, peeling or cracking of skin.

The Portland cement in this product may cause allergic contact dermatitis in sensitized individuals. This overreaction of the immune system can lead to severe inflammation. Sensitization may result from a single exposure to the low levels of Cr (VI) in Portland cement or repeated exposures over months or years. Sensitization is long lasting and, after sensitization, even very small quantities can trigger the dermatitis. Sensitization is uncommon. Individuals who experience skin problems, including seemingly minor ones, are advised to seek medical attention.



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2.3a HNOC – Hazards not otherwise classified: Not applicable

2.3b Unknown Acute Toxicity: None

SECTION III - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

<u>Hazardous Components</u>	<u>CAS No.</u>	<u>% by Weight</u>
Sand, Silica, Quartz	14808-60-7	60-100*
Portland Cement	65997 15 1	10-30*
Fly Ash	68131-74-8	5-10*

*The concentrations ranges are provided due to batch-to-batch variability.
None of the constituents of this material are of unknown toxicity.

SECTION IV – FIRST AID MEASURES

4.1 Description of the first-aid measures

General information:

After inhalation: Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. In case of unconsciousness, place patient stably in side position for transportation.

After skin contact: Wash skin with cool water and pH-neutral soap or a mild detergent. If significant skin irritation or rash occurs: get medical attention.

After eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

After swallowing: Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms/effects, acute and delayed

Inhalation: May cause respiratory tract irritation. Causes damage to organs through prolonged or repeated inhalation. This product contains crystalline silica. Prolonged or repeated inhalation of respirable silica from this product can cause silicosis.

Skin contact: Skin burns and irritation may be caused by brief exposure, though often are caused by extended exposure of 15 minutes, an hour, or longer.

Eye Contact: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Ingestion: May be harmful if swallowed. Ingestion may cause discomfort and/or distress, nausea or vomiting.

4.3 Indication of immediate medical attention and special treatment needed:

Immediately seek medical advice if symptoms are significant or persist.



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SECTION V - FIRE FIGHTING MEASURES

5.1 Flammability of the Product: Non-flammable and non-combustible**5.2 Suitable extinguishing agents:** Treat for surrounding material**5.3 Special hazards arising from the substance or mixture:** None**5.3a Products of Combustion:** None**5.3b Explosion Hazards in Presence of Various Substances:** Non-explosive in presence of shocks

SECTION VI – ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Wear personal protective equipment (See section VIII). Keep unprotected persons away.**6.2 Methods and material for containment and cleaning up:**

Do not allow to enter sewers/ surface or ground water. Dispose of unwanted materials and containers properly in accordance with all regulations.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE

7.1 Handling**Precautions for safe handling:** Ensure good ventilation/exhaustion at the workplace. DO NOT BREATHE DUST. In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator and tight fitting goggles is recommended. Wear appropriate PPE (See section 8). Do not mix with other chemical products, except as indicated by the manufacturer. Do not get in eyes, on skin or clothing. Good housekeeping is important to prevent accumulation of dust.**7.2 Storage****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:** Not required.**Further information about storage conditions:** Keep out of the reach of children. Keep container tightly closed and prevent exposure to humidity. Do not allow water to contact the product until time of use to preserve product utility.

SECTION VIII – EXPOSURE CONTROL MEASURES / PERSONAL PROTECTION

8.1 Components with limit values that require monitoring at the workplace:

Hazardous Components	CAS No.	PEL (OSHA) mg/M ³	TLV (ACGIH) mg/M ³
Silica Sand, crystalline	14808-60-7	0.05	0.025 (resp)
Portland Cement	65997-15-1	5 (resp) 15 (total)	10 (resp)
Fly Ash	68131-74-8	N/A	N/A

SDS C1

QUIKRETE Companies, LLC

2/10/2023



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8.2 Exposure Controls

Use ventilation adequate to keep exposures below recommended exposure limits.

8.3 General protective and hygienic measures

Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

8.3a Personal protective equipment

Protection of hands and feet:

Wear gloves of adequate length to offer appropriate skin protection from splashes. Nitrile, Butyl and PVC gloves have been found to offer adequate protection for incidental contact. Wear rubber boots when stepping in concrete. You cannot rely on pain to alert you to cement burns. Portland cement can cause dermatitis or sensitization.

Eye protection:

Wear approved eye protection (properly fitted dust- or splash-proof chemical safety glasses).

Respiratory protection:

Wear a NIOSH approved respirator (mask) such as N95 in poorly ventilated areas, when used for extended periods, when use is frequent, or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional, following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).

SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS

General Information

Appearance

Form: Granular Solid
Color: Gray to gray-brown colored
Odor: None

pH-value at 20°C (68 °F): 13 (10%)

Boiling point/Boiling range: Not applicable

Flash point: Not applicable

Auto igniting: Product is not self-igniting

Vapor pressure at 21°C (70°F) Not available

Density at 25°C (77 °F): 2.6 to 3.15

Solubility in / Miscibility with

Water: Insoluble

VOC content: 0 g/L VOC

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SECTION X – STABILITY AND REACTIVITY

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal storage conditions. Keep in dry storage.

10.3 Possibility of hazardous reaction

No dangerous reaction known under conditions of normal use.

10.4 Thermal decomposition / conditions to be avoided

No decomposition if used according to specifications.

10.5 Incompatible materials

Contact of silica with powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, or oxygen difluoride may cause fires

10.6 Hazardous Decomposition or By-products

Silica will dissolve in Hydrofluoric Acid and produce a corrosive gas – silicon tetrafluoride.

SECTION XI – TOXICOLOGICAL INFORMATION

11.1 Exposure Routes: Skin contact, skin adsorption, eye contact, inhalation, or ingestion.

11.2 Symptoms related to physical/chemical/toxicological characteristics:

Inhalation: May cause respiratory tract irritation. Causes damage to organs through prolonged or repeated exposure. This product contains crystalline silica. Prolonged or repeated inhalation of respirable silica from this product can cause silicosis.

Skin contact: Causes severe skin burns. Handling can cause dry skin, discomfort, irritation, and dermatitis. May cause sensitization by skin contact. Product becomes extremely alkaline when exposed to moisture, and can cause alkali burns and affect the mucous membranes.

Eye Contact: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Ingestion: Harmful if swallowed. Ingestion may cause discomfort and/or distress, nausea or vomiting.

11.3 Delayed, immediate and chronic effects of short-term and long-term exposure**Short Term**

Skin Corrosion/Irritation: Causes severe skin burns.

Serious Eye Damage/Irritation: Causes severe eye damage.

Respiratory Sensitization: Not available

Skin Sensitization: May cause an allergic skin reaction.

Specific Target Organ Toxicity-Single Exposure: (Category 3) May cause respiratory irritation.

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Aspiration Hazard: Not available

Long Term

Carcinogenicity: May cause cancer through chronic inhalation.

Germ Cell Mutagenicity: Not available

Reproductive Toxicity: Not available

Specific Target Organ Toxicity- Repeated Exposure: (Category 1) Causes damage to lungs through prolonged/repeated exposure

Synergistic/Antagonistic Effects: Not available.

SECTION XII – ECOLOGICAL INFORMATION

12.1 Ecotoxicity

May cause long-term adverse effects to the aquatic environment. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Must not reach bodies of water or drainage ditch undiluted or un-neutralized

12.2 Persistence and degradability

No further relevant information available.

12.3 Bioaccumulative potential:

No further relevant information available.

12.4 Mobility in soil

No further relevant information available.

12.5 Other Adverse Effects

No further relevant information available.

SECTION XIII – DISPOSAL CONSIDERATIONS

13.1 Waste Disposal Method

The packaging and material may be land filled; however, material should be covered to minimize generation of airborne dust. This product is not classified as a hazardous waste under the authority of the RCRA (40CFR 261) or CERCLA (40CFR 117&302). Disposal must be made in accordance with local, state and federal regulations.

13.2 Other disposal considerations**Uncleaned packaging**

Recommendation: Disposal must be made in accordance with local, state and federal regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.



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SECTION XIV – TRANSPORT INFORMATION

	DOT (U.S.)	TDG (Canada)
UN-Number	Not Regulated	Not Regulated
UN proper shipping name	Not Regulated	Not Regulated
Transport Hazard Class(es)	Not Regulated	Not Regulated
Packing Group (if applicable)	Not Regulated	Not Regulated

14.1 Environmental hazards:

Not Available

14.2 Transport in bulk according to Annex II of Marpol 73/78 and the IBC Code

Not available

14.3 Special precautions for user

Do not handle until all safety precautions have been read and understood.

SECTION XV – OTHER REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislations specific for the chemical**Canada**

WHMIS Classification: Considered to be a hazardous material under the Hazardous Products Act as defined by the Hazardous Products Regulations and subject to the requirements of Health Canada's Workplace Hazardous Material Information (WHMIS). This document complies with the WHMIS requirements of the Hazardous Products Act (HPA) and the HPR.

15.2 US Federal Information**SARA 302/311/312/313 Components**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302, 311, 312 or 313.

RCRA: Crystalline silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

CERCLA: Crystalline silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 40 CFR §302.

Emergency Planning and Community Right to Know Act (SARA Title III): Crystalline silica (quartz) is not an extremely hazardous substance under Section 302 and is not a toxic chemical subject to the requirements of Section 313.

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FDA: Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300(b)(3)(xxvi).

NTP: Respirable crystalline silica, primarily quartz dusts occurring in industrial and occupational settings, is classified as Known to be a Human Carcinogen.

OSHA Carcinogen: Crystalline silica (quartz) is not listed.

15.3 State Right to Know Laws

California Prop. 65 Components



WARNING: This product can expose you to chemicals including crystalline silica which is known to the State of California to cause cancer and hexavalent chromium compounds which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

California Inhalation Reference Exposure Level (REL): California established a chronic REL of 3 µg for silica (crystalline, respirable). A chronic REL is an airborne level of a substance at or below which no adverse health effects are anticipated in individuals indefinitely exposed to the substance at that level.

Massachusetts Toxic Use Reduction Act: Silica, crystalline (respirable size, <10 microns) is "toxic" for purposes of the Massachusetts Toxic Use Reduction Act.

15.4 Global Inventories

DSL All components of this product are on the Canadian DSL list.

TSCA No.: Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7. All constituents are listed in the TSCA inventory.

SECTION XVI – OTHER INFORMATION

Last Updated: February 10, 2023

NOTE: The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to silica contained in our products.

Prepared by

The QUIKRETE Companies, LLC

End of SDS



SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Standard JIS Z 7250:2000, and EU REACH Regulations

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: **CARTRIDGES - FOR TOOLS, BLANK or CARTRIDGES, POWER DEVICES**
CAS Number: Mixture – Metal Alloy
Synonyms: Rimfire Cartridge for Power Device, Centerfire Powertool Loaded Round, 22, 25, 27, 32, 38 Caliber Powertool Round, Power Load, Blank Power Load and/or Booster, Powder Load, Cartridges for Tools, Blank
Product Use: Powertool Loaded Round
U.N. Number: UN 0014 or UN 0323
U.N. Dangerous Goods Class Explosive, 1.4S
Manufacturer/Responsible Party: Olin Winchester, LLC
Manufacturers' Address: 600 Powder Mill Road, East Alton, IL 62024 www.winchester.com
Emergency Telephone Number: US/Canada: 1-800-424-9300
Outside US/Canada: 703-527-3887
SDS Control Group: 618-258-3507 (Technical Information Only)

Olin SDS No.: 00102.0001

Issue Date: 6/1/15

Revision Date: 01/17/2022

Revision No.: 8

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: EXPLOSIVE. KEEP AWAY FROM HEAT. DO NOT SUBJECT TO MECHANICAL SHOCK. PARTICLES FROM FIRING MAY BE HARMFUL IF INHALED. DO NOT TAKE INTERNALLY.

US DOT SYMBOLS



CANADA (WHMIS) SYMBOLS

This Product is not subject to WHMIS

Class 6 Explosive

GHS HAZARD SYMBOLS

**GHS Classifications:**

Carcinogenicity Category 1A
 Reproductive Toxicity Category 1A
 Explosive Division 1.4
 STOT RE Category 1
 Aquatic Environment, Chronic II

Signal Word:

Danger

Hazard Statements :

H204: Fire or projection hazard
 H350: May cause cancer
 H360: May damage fertility or the unborn child
 H362: May cause harm to breast-fed children
 H372: Causes damage to nervous system, kidney, and hematopoietic system through prolonged or repeated exposure
 H360: May damage fertility or the unborn child
 H411: Toxic to aquatic life with long lasting effects

Target organs:

Nervous, renal and hematopoietic systems

Precautionary Statements:

P102: Keep out of reach of children
 P210: Keep away from heat/sparks/open flame/hot surfaces
 P250: Do not subject to shock/friction
 P260: Do not breathe dust/fume/gas/mist/vapors/spray
 P264: Wash hands thoroughly after handling
 P270: Do not eat, drink or smoke when using this product
 P271: Use only outdoors or in a well-ventilated area
 P273: Avoid release to the environment
 P280: Wear protective gloves/protective clothing/eye protection/face protection

GHS Pictograms:

Explosive; Pictogram: exploding bomb
 Specific Target Organ Toxicity; Pictogram Code: GHS08
 Environment; Pictogram Code: GHS09

EU Classifications:

Hazard Symbols

E, T, N

Risk Phrases

R2: Risk of explosion by shock, friction, fire or other sources of ignition

R45 (Category 1): May cause cancer

R48: Danger of serious damage to health by prolonged exposure

R60/61 (Category 1): May impair fertility or cause harm to the unborn child

R63: Possible risk of harm to the unborn child

R64: May cause harm to breast-fed children

R51/53: Toxic to aquatic organisms and many cause long-term adverse effects in the aquatic environment

Safety Phrases

S2: Keep out of reach of children

S15: Keep away from heat

S20/21: When using do not eat, drink or smoke

S22: Do not breathe dust

S39: Wear eye/face protection

S51: Use only in well-ventilated areas

S61: Avoid release to the environment

Health Hazards or Risks From Exposure

This product is composed of a finished metal alloy cartridge which contains the various components completely sealed within. Therefore, under normal handling of this product, no exposure to any harmful materials will occur. When the product is fired, a small amount of particles may be generated which may be slightly irritating to the eyes and the respiratory tract. The particles may contain trace amounts of these harmful substances:

Lead: Ingestion of large amounts of lead can cause abdominal pain, constipation, cramps, nausea and/or vomiting. Chronic exposure to lead can cause kidney damage, anemia, reproductive effects, developmental effects and permanent nervous system damage in humans including changes in cognitive function. Occupational exposure to lead is associated with lung and stomach cancer. Lead is classified as a probable human carcinogen.

Nitroglycerin: Will produce dilation of blood vessels and drop in blood pressure which may affect the heart. It has also been shown to cause methemoglobinemia (cyanosis).

Copper: Inhalation of high concentrations of metallic copper dusts or fumes may cause nasal irritation and/or nausea, vomiting and stomach pain.

It is unlikely that the amount of particles that someone would be exposed to from firing would be sufficient to cause any of these effects.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	% By Weight	CAS Number	EINECS/ ELINCS #
Iron	0 – 97	7439-89-6	231-096-4
Copper	50 - 65	7440-50-8	231-159-6
Zinc	15 - 32	7440-66-6	231-175-3
Nitrocellulose	2 - 13	9004-70-0	Polymer
Nitroglycerin	0.5 - 2	55-63-0	200 – 240 -8
Lead styphnate	0.1 - 1	15245-44-0	239-290-0

4. FIRST AID MEASURES

Eye Contact: Immediately flush out fume or particles with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If eye irritation develops, call a physician at once.

Skin Contact: Wash skin with plenty of soap and water.

Inhalation: If symptoms of lung irritation occur (coughing, wheezing or breathing difficulty), remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep affected person warm and at rest. Get medical attention.

Ingestion: If ingested, immediately call a physician.

Medical Conditions Aggravated By Exposure:

There are no medical conditions known to be aggravated by exposure to this product in its solid form. Exposure to lead can aggravate anemia, cardiovascular and respiratory disease.

Recommendations To Physicians:

Remove from exposure, if possible, and treat symptoms

5. FIRE FIGHTING MEASURES

PROPERTY	VALUE	PROPERTY	VALUE
Explosive	Yes	Flammable	Not applicable
Combustible	Not applicable	Pyrophoric	No
Flash Point (°C):	Not applicable	Burning Rate of Material:	Not applicable
Lower Explosive Limit:	Not applicable	Autoignition Temp.:	No data
Upper Explosive Limit:	Not applicable	Flammability Classification: (defined by 29 CFR 1910.1200)	Explosive

Unusual Fire and Explosion Hazards:

Extinguishing Media:

Special Firefighting Procedures:

Possible projection hazard.

Flood area with water. If no water is available, carbon dioxide, dry chemical or earth may be used.

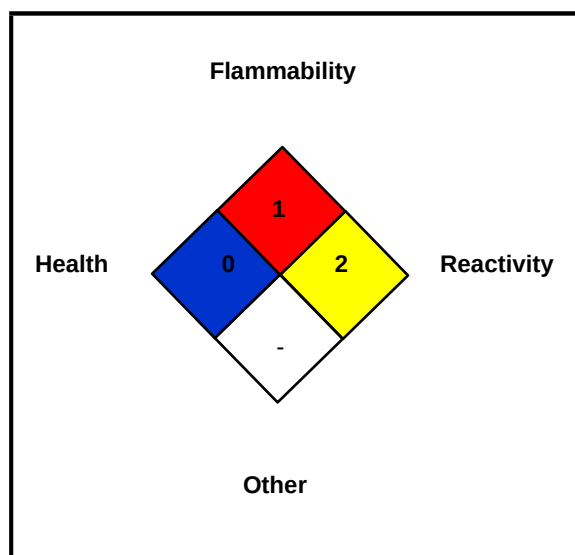
Do not fight fire when fire reaches cargo. Cargo may explode.

Firefighters must wear self-contained breathing apparatus (SCBA) and full protective equipment. Structural firefighters' protective clothing will only provide limited protection.

Isolate materials not yet involved in the fire. Move containers from fire area if possible; otherwise, cool with carefully applied water spray.

Prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas, if practical.

NFPA RATING SYSTEM



HMIS RATING SYSTEM

HEALTH HAZARD (BLUE)		0*	
FLAMMABILITY HAZARD (RED)		1	
PHYSICAL HAZARD (YELLOW)		2	
PROTECTIVE EQUIPMENT			
EYES	PPE CODE	RESPIRATORY	HEARING
	A	See Sect 8	See Sect 8

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

6. ACCIDENTAL RELEASE MEASURES

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC AT 800-424-9300.

Spill Response:

A spill of this material will normally not require emergency response team capabilities. If, however, a large spill occurs, call 1-888-289-1911 for technical assistance.

Accidental Release Procedures:

Spills of this material should be handled carefully. Do not subject materials to mechanical shock. Collect material and place in a designated, labeled waste container. See Section 13 for waste disposal.

7. HANDLING AND STORAGE

Precautions for Safe Handling:

Use appropriate personal protective equipment (see Section 8). Workers should wash hands thoroughly after handling. Eating, drinking and smoking should be prohibited in areas where this material is handled and stored.

Conditions for Safe Storage:

Store in accordance with local regulations. Store in original containers in a cool, dry location away from Acids, Class A & B explosives, strong oxidizers, and caustics. Avoid mechanical impact or shock and electrical discharge.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

CAS #	CHEMICAL NAME	ACGIH TLV	OSHA PEL	INTERNATIONAL OELS
7439-89-6	Iron	None established	None established	None established
7440-50-8	Copper	0.2 mg/m ³ (fume), 1 mg/m ³ (dusts and mists)	0.1 mg/m ³ (fume) 1 mg/m ³ (dusts and mists)	Austria, Belgium, Canada: 0.2 mg/m ³ (fumes), 1 mg/m ³ (dusts) Denmark: 1.0 mg/m ³ (dust and powder) Germany (MAK): 0.1 mg/m ³ (fume), 1 mg/m ³ (dusts and mists)
7440-66-6	Zinc	None established	None established	None established
9004-70-0	Nitrocellulose	None established	None established	None established

55-63-0	Nitroglycerin	0.05 ppm (0.46 mg/m ³) Skin	Ceiling – 0.2 ppm (2 mg/m ³) Skin	Denmark: 0.02 ppm (0.2 mg/m ³) Norway, Sweden: 0.03 ppm (0.3 mg/m ³) Austria, Belgium, Germany, The Netherlands, Poland, Switzerland: 0.05 ppm (0.47 mg/m ³), skin Finland, France: 0.1 ppm (0.9 mg/m ³), skin U.K.: 0.2 ppm (2 mg/m ³), skin
15245-44-0	Lead styphnate	None established	None established	None established

Engineering Controls:

Local exhaust ventilation is recommended if significant dusting occurs or fumes are generated. Otherwise, use general exhaust ventilation. Use explosion-proof ventilation.

Respiratory Protection:

Not normally needed. Maintain airborne contaminant concentrations below guidelines listed above. Use an appropriate approved air-purifying respirator equipped with HEPA cartridges/canisters where there is the potential for exceeding established occupational exposure limits.

Eye/Face Protection:

Use safety glasses.

Hand Protection:

Not normally needed

Skin Protection:

Not normally needed.

Hearing Protection:

Not normally needed. During firing use hearing protection.

General Hygiene:

Do not eat, drink, or smoke while using this product. Wash hands thoroughly after use.

9. PHYSICAL AND CHEMICAL PROPERTIES

PROPERTY	VALUE	PROPERTY	VALUE
<i>Appearance:</i>	Cylindrical brass cartridge	<i>Physical State:</i>	Solid
<i>Odor:</i>	None	<i>Odor Threshold:</i>	None
<i>Boiling Point (°F):</i>	Not applicable	<i>Melting point:</i>	Not applicable
<i>Vapor Pressure (mm Hg):</i>	Not applicable	<i>Freezing point:</i>	Not applicable
<i>Vapor Density (air = 1):</i>	Not applicable	<i>Bulk Density:</i>	Not applicable
<i>Specific gravity (g/cc):</i>	Not applicable	<i>Viscosity (cps):</i>	Not applicable
<i>pH:</i>	Not applicable	<i>Decomposition Temperature:</i>	Not applicable
<i>Solubility in Water (20 °C):</i>	Insoluble	<i>Evaporation Rate:</i>	Not applicable
<i>Volatiles, Percent by volume:</i>	Not applicable	<i>Octanol/water partition coefficient:</i>	Not applicable

10. STABILITY AND REACTIVITY**Stability:**

Stable under normal temperatures and pressure.

Possibility of Hazardous Reactions:

Hazardous polymerization will not occur

Incompatible Materials:

Acids, Class A & B explosives, strong oxidizers, and caustics

Hazardous Decomposition Products:

Nitrogen oxides, carbon monoxide, lead oxides, carbon dioxide, lead dust/fume

Conditions to Avoid:

Contact with incompatible materials. Physical damage to containers; cartridges may detonate if case is punctured.

11. TOXICOLOGICAL INFORMATION

Potential Routes of Entry: Inhalation, Skin, and by Ingestion.

The physical nature of this product makes absorption from any route unlikely. A small amount of inhalable particles may be created when cartridge is fired.

Effects Of Acute Exposure:

PRODUCT		COMPONENTS					
		Lead styphnate	Nitroglycerin	Copper	Nitrocellulose	Iron	Zinc
Inhalation LC ₅₀	Particles generated from firing may be slightly toxic	No data	No data	No data	No data	No data	No data
Skin Contact LD ₅₀	Skin absorption unlikely	No data	> 280 mg/kg (rabbit)	375 mg/kg, sc (rabbit)	No data	No data	No data
Ingestion LD ₅₀	Ingestion unlikely	No data	105 mg/kg (rat)	3.5 mg/kg, ip (mouse)	> 5 g/kg (rat)	30 g/kg (rat)	No data

PRODUCT		COMPONENTS					
		Lead styphnate	Nitroglycerin	Copper	Nitrocellulose	Iron	Zinc
Irritation	Particles generated from firing may be slightly irritating to the eyes	No data	Mild eye and skin irritant	Respiratory irritant	No data	Eye irritant	Eye irritant
Sensitization	Sensitization to this Product has not been reported	No data	No data	No data	No data	No data	No data

Other Adverse Effects:Target Organ Toxicity:

No reported target organ toxicity from this product. Lead has caused nervous system, kidney and hematopoietic system damage in humans and laboratory animals.

Reproductive Toxicity:

This product is not known or reported to cause reproductive effects. Lead has been shown to reduce male reproductive function in humans and laboratory animals.

Teratogenicity (Birth Defects):

This product is not known or reported to cause developmental toxicity. Lead has been shown to affect fetal development including birth defects.

Mutagenicity:

This product is not known or reported to be mutagenic. Lead has been shown to be mutagenic in several *in vitro* assays.

Carcinogenicity:

IARC and US EPA list lead and lead compounds as probable human carcinogens (Group 2A) based on sufficient evidence from animal studies and limited evidence from human studies (epidemiology). NTP classifies lead and lead compounds as reasonably anticipated to be human carcinogens. Inorganic arsenic is causally associated with lung cancer via inhalation and skin cancer by ingestion. Arsenic is listed as a known human carcinogen by IARC (Group 1), OSHA, NTP and EPA

12. ECOLOGICAL INFORMATIONEnvironmental Effects:

PRODUCT: Product has not been tested for environmental properties.

COMPONENTS:

Copper:

Copper concentrations from 0.1 to 1.0 mg/l have been found to be not toxic for most fish. However, concentrations of 0.015 to 3.0 mg/l have been reported as toxic, particularly in soft water to many kinds of fish, crustacea, mollusks, insects, and plankton.

Lead:

LC 50 (48 hrs.) to bluegill is reported to be 2-5 mg/l. Lead is toxic to waterfowl.

Nitrocellulose:

LC₅₀ > 1000 mg/l to fish, invertebrates, and algae.

Nitroglycerin:

LC₅₀ = 1.228 mg/l to Bluegill, (96 hour, static)

Zinc:

The following concentrations of zinc have been reported as lethal to fish: 0.13 mg/l, for 12 – 24 hours to Rainbow trout fingerlings; 1.9 – 3.6 mg/l, 6 hr TLM (soft water, 30°C) to Bluegill Sunfish; 4 mg/l, 3 days (hard water) to Rainbow trout; 1 mg/l, 24 hours (soft water) to Sticklebacks.

The presence of copper appears to have a synergistic effect on the toxicity of zinc towards fish.

Environmental Fate:

MOBILITY:

Dissolved lead may migrate through soil.

PERSISTENCE/DEGRADABILITY:

Not biodegradable.

BIOACCUMULATION:

No data

13. DISPOSAL CONSIDERATIONS

Care must be taken to prevent environmental contamination from the use of this material. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding the treatment, storage and disposal for hazardous and nonhazardous wastes.

14. TRANSPORT INFORMATION

Regulatory Information for US DOT, IATA, IMO, and ADR:

Proper Shipping Name	Cartridges for Tools, Blank	Cartridges, Power Device
Hazard Class Number and Description	Explosive 1.4S	Explosive 1.4S
UN Identification Number	UN0014	UN0323
Packing Group	PGII	PGII
DOT Label(s) Required	None	Explosive 1.4S

Marine Pollutant:

None of the ingredients are classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)

Additional Information:

North American Emergency Response Guidebook Number (2004): 114

U.S. DEPARTMENT OF TRANSPORTATION SHIPPING REGULATIONS: This product is classified as dangerous goods under 49 CFR 172.101. Note: May be reclassified domestically as a Limited Quantity if packaged in accordance with 49 CFR 173.63.

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is classified as Dangerous Goods.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): This product is classified as Dangerous Goods.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: This product is classified as Dangerous Goods.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): This product is classified by the United Nations Economic Commission for Europe to be dangerous goods.

15. REGULATORY INFORMATIONUS FEDERAL

TSCA	The components of this product are listed on the Toxic Substance Control Act inventory.				
CERCLA:	Copper, R.Q.* = 5000 lbs.; Zinc, R.Q. = 1000 lbs.; Nitroglycerin, R.Q. = 10 lbs; Lead, R.Q. = 10 lbs. (No reporting is required if diameter of the pieces of metal is equal to or exceeds 100 micrometers (0.004 inches).				
SARA 313:	Copper, Lead and Lead compounds, Nitroglycerin, Zinc (fume or dust)				
SARA 311/312:	<u>Health:</u>	Acute – No Chronic - No	<u>Fire:</u> No	<u>Reactivity:</u> Yes	<u>Release of Pressure:</u> No
SARA 302 EHS List:	None of the components of this product are listed.				

*RQ = Reportable Quantity

STATE RIGHT-TO-KNOW STATUS

Component	California	New Jersey	Pennsylvania	Massachusetts	Michigan
Iron	Not listed	Not listed	Not listed	Not listed	Not listed
Copper	Not listed	X	X	X	X
Zinc	Not listed	X	Not listed	X	X
Nitrocellulose	Not listed	X	X	X	Not listed
Nitroglycerin	Not listed	X	X	X	Not listed
Lead styphnate	X	Not listed	Not listed	X	Not listed

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65)

Warning! This product contains detectable amounts of a chemical known to the State of California to cause cancer and/or birth defects or other reproductive harm.

GHS CLASSIFICATION

Carcinogenicity Category 1A
Reproductive Toxicity Category 1A
Explosive Division 1.4
STOT RE Category 1
Aquatic Environment, Chronic II

EUROPEAN REGULATIONS

Hazard Classification

Danger Symbols: E, T, N

Risk Phrases: R2, R48, R60, R63, R51/53

Safety Phrases: S2, S15, S20/21, S22, S39, S51, S61

German WGK Classification: Not known.

CANADIAN REGULATIONS

DSL/NDSL Inventory: The components of this product are on the DSL

IDL: Copper, Lead

CEPA PRIORITIES LIST: None

WHMIS: This product is not subject to WHMIS. It is regulated as a Class 6 Explosive in Canada.

JAPANESE REGULATIONS

Existing National Inventory of Chemical Substances (ENCS): The components of this product are listed

Japanese Priority Assessment Chemical Substances: None of the components of this product are listed

OTHER INTERNATIONAL CHEMICAL INVENTORIES

Swiss Giftliste List of Toxic Substances: All Components Listed

Australian Inventory (AICS): All Components Listed

16. OTHER INFORMATION

REVISIONS: 08

DATE: 01/17/2022

PREPARED BY: Olin Winchester, LLC

OTHER: Additional information available from: www.winchester.com

NOTICE: THE INFORMATION IN THIS SDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. OLIN BELIEVES THIS INFORMATION TO BE RELIABLE AND CURRENT AS OF THE DATE OF PUBLICATION, BUT MAKES NO WARRANTY THAT IT IS.

1. Identification

Product identifier	PVC Medium Clear Cement	
Other means of identification		
SDS number	1101C	
Synonyms	Part Numbers: Clear - 30350, 31017, 31018, 31019, 31020, 31021, 31535, 31536, 31537, 31538, 31539, 31550, 31551, 31552, 31553, 31946, 31947, 31948, 31949, 32222, 32223, 32224, 32225	
Recommended use	Joining PVC Pipes	
Recommended restrictions	None known.	
	Manufacturer	Distributor
Company Name	Oatey Co.	Oatey Canada Supply Chain Services Co.
Address	4700 West 160th St. Cleveland, OH 44135	145 Walker Drive Brampton, ON L6T 5P5, Canada
Telephone	216-267-7100	
E-mail	info@oatey.com	
Transport Emergency	Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)	
Emergency First Aid	1-877-740-5015	
Contact person	MSDS Coordinator	

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
	Physical hazards not otherwise classified	Category 1
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1
	Health hazards not otherwise classified	Category 1
Environmental hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	Highly flammable liquid and vapor. Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.
Precautionary statement	
Prevention	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use non-sparking tools. Take action to prevent static discharges. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

Response	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. Do NOT induce vomiting. Take off contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish.
Storage	Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. May form explosive peroxides.
Supplemental information	Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Furan, Tetrahydro-	109-99-9	30-50
Acetone	67-64-1	10-25
Methyl ethyl ketone	78-93-3	10-25
Ethene, chloro-, homopolymer, Polyvinyl chloride; PVC;	9002-86-2	12-20
Cyclohexanone	108-94-1	10-20
Fumed Silica	112945-52-5	1-5

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis. If ingestion of a large amount does occur, call a poison control center immediately.
Most important symptoms/effects, acute and delayed	Causes eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. In the event of fire, cool tanks with water spray. Cool containers exposed to flames with water until well after the fire is out.
General fire hazards	Highly flammable liquid and vapor. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors or mists. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Use water spray to reduce vapors or divert vapor cloud drift. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. This product is miscible in water.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Vapors may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not taste or swallow. Avoid breathing mist or vapor. Avoid contact with skin. Avoid contact with eyes. Avoid prolonged exposure. Avoid contact with clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling.
Conditions for safe storage, including any incompatibilities	Store locked up. Do not handle or store near an open flame, heat or other sources of ignition. Keep away from heat, sparks and open flame. This material can accumulate static charge which may cause spark and become an ignition source. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a closed container away from incompatible materials. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Keep container tightly closed. Store in a well-ventilated place. Keep out of the reach of children. Keep in an area equipped with sprinklers. Use care in handling/storage. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Acetone (CAS 67-64-1)	STEL	750 ppm	
	TWA	500 ppm	
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm	
	TWA	20 ppm	
Ethene, chloro-, homopolymer, Polyvinyl chloride; PVC; (CAS 9002-86-2)	TWA	3 mg/m3	Respirable particles.
Furan, Tetrahydro- (CAS 109-99-9)	STEL	100 ppm	
	TWA	50 ppm	
Methyl ethyl ketone (CAS 78-93-3)	STEL	300 ppm	
	TWA	200 ppm	

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value	Form
Acetone (CAS 67-64-1)	STEL	1800 mg/m3	Respirable particles.
	TWA	750 ppm	
Cyclohexanone (CAS 108-94-1)	STEL	1200 mg/m3	
	TWA	500 ppm	
Ethene, chloro-, homopolymer, Polyvinyl chloride; PVC; (CAS 9002-86-2)	STEL	200 mg/m3	
	TWA	50 ppm	
Furan, Tetrahydro- (CAS 109-99-9)	STEL	80 mg/m3	Total particulate.
	TWA	20 ppm	
Methyl ethyl ketone (CAS 78-93-3)	STEL	3 mg/m3	Total particulate.
	TWA	10 mg/m3	
Methyl ethyl ketone (CAS 78-93-3)	STEL	295 mg/m3	
	TWA	100 ppm	
Methyl ethyl ketone (CAS 78-93-3)	STEL	147 mg/m3	
	TWA	50 ppm	
Methyl ethyl ketone (CAS 78-93-3)	STEL	885 mg/m3	
	TWA	300 ppm	

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Acetone (CAS 67-64-1)	STEL	500 ppm	Respirable fraction.
	TWA	250 ppm	
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm	
	TWA	20 ppm	
Ethene, chloro-, homopolymer, Polyvinyl chloride; PVC; (CAS 9002-86-2)	STEL	3 mg/m3	
	TWA	10 mg/m3	
Furan, Tetrahydro- (CAS 109-99-9)	STEL	100 ppm	Total dust.
	TWA	50 ppm	
Methyl ethyl ketone (CAS 78-93-3)	STEL	100 ppm	
	TWA	50 ppm	

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
Acetone (CAS 67-64-1)	STEL	750 ppm	Inhalable particles.
	TWA	500 ppm	
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm	
	TWA	20 ppm	
Ethene, chloro-, homopolymer, Polyvinyl chloride; PVC; (CAS 9002-86-2)	STEL	10 mg/m3	
	TWA	10 mg/m3	
Furan, Tetrahydro- (CAS 109-99-9)	STEL	100 ppm	
	TWA	50 ppm	

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
Methyl ethyl ketone (CAS 78-93-3)	STEL	300 ppm	
	TWA	200 ppm	

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Acetone (CAS 67-64-1)	STEL	750 ppm	
	TWA	500 ppm	
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm	
	TWA	20 ppm	
Ethene, chloro-, homopolymer, Polyvinyl chloride; PVC; (CAS 9002-86-2)	TWA	3 mg/m3	Respirable particles.
Furan, Tetrahydro- (CAS 109-99-9)	STEL	10 mg/m3 100 ppm	Inhalable
	TWA	50 ppm	
Methyl ethyl ketone (CAS 78-93-3)	STEL	300 ppm	
	TWA	200 ppm	

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value	Form
Acetone (CAS 67-64-1)	STEL	2380 mg/m3 1000 ppm	
	TWA	1190 mg/m3 500 ppm	
Cyclohexanone (CAS 108-94-1)	TWA	100 mg/m3 25 ppm	
Ethene, chloro-, homopolymer, Polyvinyl chloride; PVC; (CAS 9002-86-2)	TWA	10 mg/m3	Total dust.
Furan, Tetrahydro- (CAS 109-99-9)	TWA	300 mg/m3	
Methyl ethyl ketone (CAS 78-93-3)	STEL	100 ppm 300 mg/m3	
	TWA	100 ppm 150 mg/m3 50 ppm	

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*
Cyclohexanone (CAS 108-94-1)	80 mg/l	1,2-Cyclohexanediol, with hydrolysis	Urine	*
	8 mg/l	Cyclohexanol, with hydrolysis	Urine	*
Furan, Tetrahydro- (CAS 109-99-9)	2 mg/l	Tetrahydrofuran	Urine	*
Methyl ethyl ketone (CAS 78-93-3)	2 mg/l	MEK	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

Canada - Alberta OELs: Skin designation

Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)

Can be absorbed through the skin.
Can be absorbed through the skin.

Canada - British Columbia OELs: Skin designation

Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)

Can be absorbed through the skin.
Can be absorbed through the skin.

Canada - Manitoba OELs: Skin designation

Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)

Can be absorbed through the skin.
Can be absorbed through the skin.

Canada - Ontario OELs: Skin designation

Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)

Can be absorbed through the skin.
Can be absorbed through the skin.

Canada - Quebec OELs: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Canada - Saskatchewan OELs: Skin designation

Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)

Can be absorbed through the skin.
Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)

Can be absorbed through the skin.
Can be absorbed through the skin.

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Wash hands after handling and before eating.

9. Physical and chemical properties

Appearance

Physical state

Liquid.

Form

Translucent liquid.

Color

Clear.

Odor

Solvent.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Initial boiling point and boiling range

151 °F (66.11 °C)

Flash point

14.0 - 23.0 °F (-10.0 - -5.0 °C)

Evaporation rate

5.5 - 8

Flammability (solid, gas)

Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower
(%)

1.8

Flammability limit - upper (%)	11.8
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	145 mm Hg @ 20 C
Vapor density	2.5
Relative density	0.93 +/- 0.02
Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	1200 - 2500 cP
Viscosity temperature	77 °F (25 °C)
Other information	
Bulk density	7.7 lbs/gal
VOC (Weight %)	< 510 g/l SCAQMD 1168/M316A

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Ammonia. Amines. Isocyanates. Caustics.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May be fatal if swallowed and enters airways. May cause irritation to the respiratory system. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Eye contact	Causes serious eye irritation.
Ingestion	May be fatal if swallowed and enters airways. Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Causes eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity	May be fatal if swallowed and enters airways. Narcotic effects. May cause respiratory irritation.

Components	Species	Test Results
Cyclohexanone (CAS 108-94-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	948 mg/kg
<i>Inhalation</i>		
LC50	Rat	8000 ppm, 4 hours

Components	Species	Test Results
Oral LD50	Rat	800 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classified.

ACGIH Carcinogens

Acetone (CAS 67-64-1)

A4 Not classifiable as a human carcinogen.

Cyclohexanone (CAS 108-94-1)

A3 Confirmed animal carcinogen with unknown relevance to humans.

Ethene, chloro-, homopolymer, Polyvinyl chloride; PVC; (CAS 9002-86-2)

A4 Not classifiable as a human carcinogen.

Furan, Tetrahydro- (CAS 109-99-9)

A3 Confirmed animal carcinogen with unknown relevance to humans.

Canada - Manitoba OELs: carcinogenicity

ACETONE (CAS 67-64-1)

Not classifiable as a human carcinogen.

CYCLOHEXANONE (CAS 108-94-1)

Confirmed animal carcinogen with unknown relevance to humans.

POLYVINYL CHLORIDE (PVC), RESPIRABLE FRACTION (CAS 9002-86-2)

Not classifiable as a human carcinogen.

TETRAHYDROFURAN (CAS 109-99-9)

Confirmed animal carcinogen with unknown relevance to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cyclohexanone (CAS 108-94-1)

3 Not classifiable as to carcinogenicity to humans.

Ethene, chloro-, homopolymer, Polyvinyl chloride; PVC; (CAS 9002-86-2)

3 Not classifiable as to carcinogenicity to humans.

Fumed Silica (CAS 112945-52-5)

3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Narcotic effects. Respiratory tract irritation.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
Cyclohexanone (CAS 108-94-1)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) 481 - 578 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

Acetone (CAS 67-64-1)

-0.24

Cyclohexanone (CAS 108-94-1)

0.81

Furan, Tetrahydro- (CAS 109-99-9)

0.46

Methyl ethyl ketone (CAS 78-93-3)

0.29

Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. If discarded, this product is considered a RCRA ignitable waste, D001. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

TDG

UN number	UN1133
UN proper shipping name	Adhesives
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	D
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	UN1133
UN proper shipping name	Adhesives
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1133
UN proper shipping name	Adhesives
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-D
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

15. Regulatory information

Canadian regulations

Controlled Drugs and Substances Act
Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Acetone (CAS 67-64-1)

Class B

Methyl ethyl ketone (CAS 78-93-3)

Class B

International regulations**Stockholm Convention**

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other Information

Issue date 17-December-2015

Revision date -

Version # 01

List of abbreviations

TWA: Time weighted average.
 STEL: Short term exposure limit.
 IATA: International Air Transport Association.
 IMDG: International Maritime Dangerous Goods.
 ACGIH: American Conference of Industrial Hygienists.
 CAS: Chemical Abstracts Service.
 OEL: Occupational Exposure Limit.
 LD50: Lethal dose 50% (dose that kills 50% of test animals).
 LC50: Lethal concentration 50% (concentration that kills 50% of test animals).
 MARPOL: International Convention for the Prevention of Pollution from Ships.

Disclaimer

Oatey Co. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.



SAFETY DATA SHEET

1. Identification

Product identifier	Oatey Purple Primer- NSF Listed for PVC and CPVC	
Other means of identification		
SDS number	1402C	
Synonyms	Part Numbers: 30755(TV), 30756(TV), 30757(TV), 30758, 30759, 30927, 31462, 31480, 31481, 31482, 31483	
Recommended use	Joining PVC Pipes	
Recommended restrictions	None known.	
	Manufacturer	Distributor
Company Name	Oatey Co.	Oatey Canada Supply Chain Services Co.
Address	4700 West 160th St. Cleveland, OH 44135	145 Walker Drive Brampton, ON L6T 5P5, Canada
Telephone	216-267-7100	
E-mail	info@oatey.com	
Transport Emergency	Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)	
Emergency First Aid	1-877-740-5015	
Contact person	MSDS Coordinator	

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
	Physical hazards not otherwise classified	Category 1
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1
	Health hazards not otherwise classified	Category 1
Environmental hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	Highly flammable liquid and vapor. Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.
Precautionary statement	
Prevention	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use non-sparking tools. Take action to prevent static discharges. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

Response	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. Do NOT induce vomiting. Take off contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish.
Storage	Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. May form explosive peroxides.
Supplemental information	Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Acetone	67-64-1	25-40
Cyclohexanone	108-94-1	25-40
Methyl ethyl ketone	78-93-3	15-30

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.
Most important symptoms/effects, acute and delayed	Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. Cool containers exposed to flames with water until well after the fire is out.
General fire hazards	Highly flammable liquid and vapor. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors or mists. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Use water spray to reduce vapors or divert vapor cloud drift. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. This product is miscible in water. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Vapors may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not taste or swallow. Avoid breathing mist or vapor. Avoid contact with skin. Avoid contact with eyes. Avoid prolonged exposure. Avoid contact with clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep in an area equipped with sprinklers.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Acetone (CAS 67-64-1)	STEL	500 ppm
	TWA	250 ppm
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm
	TWA	20 ppm
Methyl ethyl ketone (CAS 78-93-3)	STEL	300 ppm
	TWA	200 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Acetone (CAS 67-64-1)	STEL	1800 mg/m3
		750 ppm
	TWA	1200 mg/m3
Cyclohexanone (CAS 108-94-1)	STEL	500 ppm
		200 mg/m3
	TWA	50 ppm
		80 mg/m3
		20 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Methyl ethyl ketone (CAS 78-93-3)	STEL	885 mg/m3
	TWA	300 ppm
		590 mg/m3 200 ppm

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Acetone (CAS 67-64-1)	STEL	500 ppm
	TWA	250 ppm
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm
	TWA	20 ppm
Methyl ethyl ketone (CAS 78-93-3)	STEL	100 ppm
	TWA	50 ppm

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value
Acetone (CAS 67-64-1)	STEL	500 ppm
	TWA	250 ppm
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm
	TWA	20 ppm
Methyl ethyl ketone (CAS 78-93-3)	STEL	300 ppm
	TWA	200 ppm

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Acetone (CAS 67-64-1)	STEL	750 ppm
	TWA	500 ppm
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm
	TWA	20 ppm
Methyl ethyl ketone (CAS 78-93-3)	STEL	300 ppm
	TWA	200 ppm

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Acetone (CAS 67-64-1)	STEL	2380 mg/m3
		1000 ppm
	TWA	1190 mg/m3
		500 ppm
Cyclohexanone (CAS 108-94-1)	TWA	100 mg/m3
		25 ppm
Methyl ethyl ketone (CAS 78-93-3)	STEL	300 mg/m3
		100 ppm
	TWA	150 mg/m3
		50 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	25 mg/l	Acetone	Urine	*
Cyclohexanone (CAS 108-94-1)	80 mg/l	1,2-Cyclohexanediol, with hydrolysis	Urine	*
	8 mg/l	Cyclohexanol, with hydrolysis	Urine	*
Methyl ethyl ketone (CAS 78-93-3)	2 mg/l	MEK	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

Canada - Alberta OELs: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Canada - British Columbia OELs: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Canada - Manitoba OELs: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Canada - Ontario OELs: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Canada - Quebec OELs: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Canada - Saskatchewan OELs: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state

Liquid.

Form

Translucent liquid.

Color

Purple

Odor

Solvent.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Initial boiling point and boiling range

151 °F (66.11 °C)

Flash point	14.0 - 23.0 °F (-10.0 - -5.0 °C)
Evaporation rate	5.5 - 8
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.8
Flammability limit - upper (%)	11.8
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	145 mm Hg @ 20 C
Vapor density	2.5
Relative density	0.84 +/- 0.02 @20°C
Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Bulk density	7 lb/gal
VOC (Weight %)	505 g/l SQACMD Method 24

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Ammonia. Amines. Isocyanates. Caustics.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May be fatal if swallowed and enters airways. May cause irritation to the respiratory system. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	May be fatal if swallowed and enters airways. Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Information on toxicological effects

Acute toxicity	May be fatal if swallowed and enters airways. Narcotic effects. May cause respiratory irritation.

Components	Species	Test Results
Acetone (CAS 67-64-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	20 ml/kg
<i>Inhalation</i>		
LC50	Rat	50 mg/l, 8 Hours
<i>Oral</i>		
LD50	Rat	5800 mg/kg
Cyclohexanone (CAS 108-94-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	948 mg/kg
<i>Inhalation</i>		
LC50	Rat	8000 ppm, 4 hours
<i>Oral</i>		
LD50	Rat	800 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity In 2012 USEPA Integrated Risk Information System (IRIS) reviewed a two species inhalation lifetime study on THF conducted by NTP (1998). Male rats developed renal tumors and female mice developed liver tumors while neither the female rats nor the male mice showed similar results. Because the carcinogenic mechanisms could not be identified clearly in either species for either tumor, the EPA determined that the male rat and female mouse findings are relevant to the assessment of carcinogenic potential in humans. Therefore, the IRIS review concludes that these data in aggregate indicate that there is "suggestive evidence of carcinogenic potential" following exposure to THF by all routes of exposure.

ACGIH Carcinogens

Acetone (CAS 67-64-1)

A4 Not classifiable as a human carcinogen.

Cyclohexanone (CAS 108-94-1)

A3 Confirmed animal carcinogen with unknown relevance to humans.

Canada - Manitoba OELs: carcinogenicity

ACETONE (CAS 67-64-1)

Not classifiable as a human carcinogen.

CYCLOHEXANONE (CAS 108-94-1)

Confirmed animal carcinogen with unknown relevance to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cyclohexanone (CAS 108-94-1)

3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Narcotic effects. Respiratory tract irritation.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
Acetone (CAS 67-64-1)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) > 100 mg/l, 96 hours
Cyclohexanone (CAS 108-94-1)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) 481 - 578 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

Acetone (CAS 67-64-1)	-0.24
Cyclohexanone (CAS 108-94-1)	0.81
Methyl ethyl ketone (CAS 78-93-3)	0.29

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

TDG

UN number	UN1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (Methyl ethyl ketone, Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	D
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	UN1993
UN proper shipping name	Flammable liquid, n.o.s. (Methyl ethyl ketone, Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	3H
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (Methyl ethyl ketone, Acetone)

Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not available.

15. Regulatory information

Canadian regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Acetone (CAS 67-64-1)

Class B

Methyl ethyl ketone (CAS 78-93-3)

Class B

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other Information

Issue date 21-December-2015

Revision date -01-Jan-2020

Version # 02-1 - Added part 31462

Disclaimer

Oatey Co. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.



SAFETY DATA SHEET

1. Identification

Product identifier	Smoke Test® - 2.5 oz
Other means of identification	
Product Code	No. 02105 (Item# 1003205)
Recommended use	Smoke detector tester
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufactured or sold by:	
Company name	CRC Industries, Inc.
Address	885 Louis Dr. Warminster, PA 18974 US
Telephone	
General Information	215-674-4300
Technical Assistance	800-521-3168
Customer Service	800-272-4620
24-Hour Emergency (CHEMTREC)	800-424-9300 (US)
Website	www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Flammable aerosols Gases under pressure	Category 1 Liquefied gas
Health hazards	Serious eye damage/eye irritation	Category 2
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	
Label elements		



Signal word	Danger
Hazard statement	Extremely flammable aerosol. Contains gas under pressure; may explode if heated. Causes serious eye irritation.
Precautionary statement	
Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Do not apply while equipment is energized. Extinguish all flames, pilot lights, and heaters. Vapors will accumulate readily and may ignite. Use only outdoors or in a well-ventilated area. Maintain ventilation during use and until all vapors are gone. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Wash thoroughly after handling. Wear eye protection/face protection.
Response	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Storage	Store in a well-ventilated place. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Exposure to high temperature may cause can to burst.
Disposal	Dispose of contents/container in accordance with local/regional/national regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
liquefied petroleum gas		68476-86-8	60 - 70
ethanol		64-17-5	20 - 30
1,2,3-propanetriol		56-81-5	1 - 3

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	In the unlikely event of swallowing contact a physician or poison control center. Rinse mouth.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may rupture when exposed to heat or flame. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up.
General fire hazards	Extremely flammable aerosol. Contents under pressure. Pressurized container may rupture when exposed to heat or flame.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Wear appropriate protective equipment and clothing during clean-up. Emergency personnel need self-contained breathing equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water. Stop the flow of material, if this is without risk. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Avoid contact with eyes. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. For product usage instructions, see the product label.

Conditions for safe storage, including any incompatibilities

Level 3 Aerosol.

Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50 °C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Store in a well-ventilated place.

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
1,2,3-propanetriol (CAS 56-81-5)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
ethanol (CAS 64-17-5)	PEL	1900 mg/m3	
		1000 ppm	

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
1,2,3-propanetriol (CAS 56-81-5)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.

US. ACGIH Threshold Limit Values

Components	Type	Value
ethanol (CAS 64-17-5)	STEL	1000 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
ethanol (CAS 64-17-5)	TWA	1900 mg/m3
		1000 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear protective gloves such as: Neoprene. Rubber. Vinyl.

Other

Wear suitable protective clothing.

Respiratory protection	If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies. Air monitoring is needed to determine actual employee exposure levels.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Aerosol.
Color	Colorless.
Odor	Alcoholic.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	-173.4 °F (-114.1 °C) estimated
Initial boiling point and boiling range	172.9 °F (78.3 °C) estimated
Flash point	56.0 °F (13.3 °C) Tag Closed Cup
Evaporation rate	Very fast.
Flammability (solid, gas)	Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	3.3 % estimated
Flammability limit - upper (%)	19 % estimated
Vapor pressure	3320.9 hPa estimated
Vapor density	> 1 (air = 1)
Relative density	0.63 estimated
Solubility(ies)	
Solubility (water)	Complete.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	363 °F (183.9 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Percent volatile	65.8 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Contact with incompatible materials.
Incompatible materials	Acetyl chloride. Nitric acids. Strong acids. Chromium trioxide. Potassium chlorate. Potassium permanganate. Peroxides. Chromates. Strong oxidizing agents.
Hazardous decomposition products	Acrolein. Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	Prolonged skin contact may cause temporary irritation.

Eye contact	Causes serious eye irritation.	
Ingestion	May cause gastrointestinal irritation, including nausea and vomiting. Ingestion of ethanol can cause drunkenness and central nervous system depression.	
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.	
Information on toxicological effects		
Acute toxicity	Not known.	
Components	Species	Test Results
ethanol (CAS 64-17-5)		
Acute		
Dermal		
LD50	Rabbit	20 g/kg
Inhalation		
LC50	Rat	8000 mg/l, 4 hours
* Estimates for product may be based on additional component data not shown.		
Skin corrosion/irritation	Repeated exposure may cause skin dryness or cracking.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	Not a respiratory sensitizer.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	Not classifiable as to carcinogenicity to humans.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Not listed.		
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)		
Not listed.		
US. National Toxicology Program (NTP) Report on Carcinogens		
Not listed.		
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.	
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	May be fatal if swallowed and enters airways.	
Chronic effects	Prolonged inhalation may be harmful.	

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.		
Persistence and degradability	No data is available on the degradability of this product.		
Bioaccumulative potential			
	Partition coefficient n-octanol / water (log Kow)		
	1,2,3-propanetriol	-1.76	
	ethanol	-0.31	
Mobility in soil	No data available.		
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.		

13. Disposal considerations

Disposal instructions	If discarded, this product is considered a RCRA ignitable waste, D001. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Dispose in accordance with all applicable regulations.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 F
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN1950
UN proper shipping name	Aerosols, flammable, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	-
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	N82
Packaging exceptions	306
Packaging non bulk	None
Packaging bulk	None

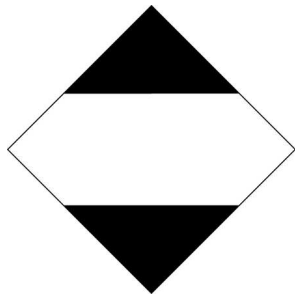
IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	-
ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	-
Environmental hazards	
Marine pollutant	No.
EmS	F-D, S-U
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

DOT; IMDG





15. Regulatory information

US federal regulations

All components are on the U.S. EPA TSCA Inventory List.
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

CERCLA Hazardous Substances: Reportable quantity

Not listed.

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

1,2,3-propanetriol (CAS 56-81-5)

ethanol (CAS 64-17-5)

Other Flavoring Substances with OSHA PEL's

Low priority

Food and Drug Administration (FDA)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Classified hazard categories

Flammable (gases, aerosols, liquids, or solids)

Gas under pressure

Serious eye damage or eye irritation

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

SARA 313 (TRI reporting)

Not regulated.

US state regulations

US. New Jersey Worker and Community Right-to-Know Act

1,2,3-propanetriol (CAS 56-81-5)

ethanol (CAS 64-17-5)

US. Massachusetts RTK - Substance List

1,2,3-propanetriol (CAS 56-81-5)

ethanol (CAS 64-17-5)

US. Pennsylvania Worker and Community Right-to-Know Law

1,2,3-propanetriol (CAS 56-81-5)

ethanol (CAS 64-17-5)

US. Rhode Island RTK

1,2,3-propanetriol (CAS 56-81-5)

ethanol (CAS 64-17-5)

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

Volatile organic compounds (VOC) regulations**EPA****VOC content (40 CFR 51.100(s))** 97.5 %**Consumer products (40 CFR 59, Subpt. C)** Not regulated**State****Consumer products** Not regulated**VOC content (CA)** 97.5 %**VOC content (OTC)** 97.5 %**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	06-18-2022
Prepared by	Allison Yoon
Version #	01
Further information	CRC # 418/1002399
Disclaimer	The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC's knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries, Inc..
Revision information	This document has undergone significant changes and should be reviewed in its entirety.

1. Identification

Product identifier TFE Paste

Other means of identification

SDS number 3701E

Synonyms Part Numbers: 23014, 23015, 23030, 23045, 23060, 23075

Recommended use Pipe Joint Compound for Threaded Metal Pipes

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name William H. Harvey Company

Address 4334 South 67th Street
Omaha, NE 68117

Telephone 402-331-1175

E-mail info@oatey.com

Transport Emergency Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)

Emergency First Aid 1-877-740-5015

Contact person MSDS Coordinator

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement The mixture does not meet the criteria for classification.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Wash hands after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. The thermal decomposition vapors of fluorinated polymers may cause polymer fume fever.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Calcium carbonate	1317-65-3	50-70
Oxidized Soy Bean Oil	68152-81-8	10-30
Polyfluoroethylene	9002-84-0	3-7
2-Butoxyethanol	111-76-2	1-5
Alkyl Quaternary Ammonium Bentonite	68953-58-2	1-5
Distillates (petroleum), Hydrotreated Light Naphthenic	64742-53-6	1-5

Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	1-5
Titanium dioxide	13463-67-7	1-5
Quartz	14808-60-7	<1.3

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk. Cool material exposed to heat with water spray and remove it if no risk is involved.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Avoid prolonged exposure. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
2-Butoxyethanol (CAS 111-76-2)	PEL	240 mg/m3	
		50 ppm	
Calcium carbonate (CAS 1317-65-3)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	PEL	5 mg/m3	Mist.
		2000 mg/m3	
		500 ppm	
Distillates (petroleum), Hydrotreated Light Naphthenic (CAS 64742-53-6)	PEL	5 mg/m3	Mist.
		2000 mg/m3	
		500 ppm	
Quartz (CAS 14808-60-7)	PEL	0.05 mg/m3	Respirable dust.
Titanium dioxide (CAS 13463-67-7)	PEL	15 mg/m3	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Quartz (CAS 14808-60-7)	TWA	0.3 mg/m3	Total dust.
		0.1 mg/m3	Respirable.
		2.4 mppcf	Respirable.
Titanium dioxide (CAS 13463-67-7)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
2-Butoxyethanol (CAS 111-76-2)	TWA	20 ppm	
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	TWA	5 mg/m3	Inhalable fraction.
Quartz (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m3	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
2-Butoxyethanol (CAS 111-76-2)	TWA	24 mg/m3	
		5 ppm	
Calcium carbonate (CAS 1317-65-3)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Total
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	Ceiling	1800 mg/m3	
	STEL	10 mg/m3	Mist.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Distillates (petroleum), Hydrotreated Light Naphthenic (CAS 64742-53-6)	TWA	5 mg/m3	Mist.
	Ceiling	1800 mg/m3	
Quartz (CAS 14808-60-7)	STEL	10 mg/m3	Mist.
	TWA	0.05 mg/m3	Respirable dust.

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
2-Butoxyethanol (CAS 111-76-2)	200 mg/g	Butoxyacetic acid (BAA), with hydrolysis	Creatinine in urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

2-Butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

2-Butoxyethanol (CAS 111-76-2) Skin designation applies.

US - Tennessee OELs: Skin designation

2-Butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

US. NIOSH: Pocket Guide to Chemical Hazards

2-Butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

2-Butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Skin protection

Other Wear suitable protective clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Liquid paste.

Color White.

Odor Petroleum.

Odor threshold Not available.

pH Not available.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point	153.0 °F (67.2 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	< 1
Relative density	1.7
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	30000 cP
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
VOC	86 g/l 4.9% by weight

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Fluorine. Acids.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

Information on toxicological effects

Acute toxicity Not expected to be acutely toxic.

Components	Species	Test Results
Titanium dioxide (CAS 13463-67-7)		
<u>Acute</u>		
Inhalation		
LC50	Rat	3.43 mg/l, 4 Hours

Components	Species	Test Results
Oral LD50	Rat	> 5000 mg/kg
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.	
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	Not a respiratory sensitizer.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.)	
IARC Monographs. Overall Evaluation of Carcinogenicity		
2-Butoxyethanol (CAS 111-76-2)	3 Not classifiable as to carcinogenicity to humans.	
Quartz (CAS 14808-60-7)	1 Carcinogenic to humans.	
Titanium dioxide (CAS 13463-67-7)	2B Possibly carcinogenic to humans.	
NTP Report on Carcinogens		
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	Known To Be Human Carcinogen.	
Quartz (CAS 14808-60-7)	Known To Be Human Carcinogen.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		
Quartz (CAS 14808-60-7)	Cancer	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.	
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Not an aspiration hazard.	
Chronic effects	May be harmful if absorbed through skin. Prolonged inhalation may be harmful.	
	2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.	
	Prolonged exposure may cause chronic effects.	

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.	
Persistence and degradability	No data is available on the degradability of this product.	
Bioaccumulative potential	No data available.	
Partition coefficient n-octanol / water (log Kow)		
2-Butoxyethanol (CAS 111-76-2)	0.83	
Mobility in soil	No data available.	
Other adverse effects	The product contains volatile organic compounds which have a photochemical ozone creation potential.	

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information**DOT**

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not established.

General information

DOT: Not regulated as dangerous goods except when shipped in bulk. This material is not regulated if in a container of 119 gallon (450 L) capacity or less.

15. Regulatory information**US federal regulations**

All components are on the U.S. EPA TSCA Inventory List.
This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Quartz (CAS 14808-60-7)

Cancer
lung effects
immune system effects
kidney effects

CERCLA Hazardous Substance List (40 CFR 302.4)

2-Butoxyethanol (CAS 111-76-2)

LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)**Hazard categories**

Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
2-Butoxyethanol	111-76-2	1-5

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Quartz (CAS 14808-60-7)

Titanium dioxide (CAS 13463-67-7)

US. Massachusetts RTK - Substance List

2-Butoxyethanol (CAS 111-76-2)

Calcium carbonate (CAS 1317-65-3)
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)
Distillates (petroleum), Hydrotreated Light Naphthenic (CAS 64742-53-6)
Quartz (CAS 14808-60-7)
Titanium dioxide (CAS 13463-67-7)

US. New Jersey Worker and Community Right-to-Know Act

2-Butoxyethanol (CAS 111-76-2)
Calcium carbonate (CAS 1317-65-3)
Distillates (petroleum), Hydrotreated Light Naphthenic (CAS 64742-53-6)
Quartz (CAS 14808-60-7)
Titanium dioxide (CAS 13463-67-7)

US. Pennsylvania Worker and Community Right-to-Know Law

2-Butoxyethanol (CAS 111-76-2)
Calcium carbonate (CAS 1317-65-3)
Quartz (CAS 14808-60-7)
Titanium dioxide (CAS 13463-67-7)

US. Rhode Island RTK

Calcium carbonate (CAS 1317-65-3)
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)
Distillates (petroleum), Hydrotreated Light Naphthenic (CAS 64742-53-6)
Quartz (CAS 14808-60-7)
Titanium dioxide (CAS 13463-67-7)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 05-February-2015
Revision date 26-April-2017
Version # 02
HMIS® ratings Health: 0
Flammability: 2
Physical hazard: 0

NFPA ratings



Disclaimer

William H. Harvey Company cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

SAFETY DATA SHEET

Product name:	WD-40® Multi-Use Product - Aerosol	Page:	1/9
Supersedes date:		Revision:	2020-01-22
Product No.:		SDS-ID:	IL-EN/1.0

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name: WD-40® Multi-Use Product - Aerosol

Container size: 100 ml, 125 ml, 150ml, 200 ml, 240 ml, 250 ml, 300 ml, 400 ml, 420 ml

1.2. Relevant identified uses of the substance or mixture and uses advised against

Application: Universal lubricant.

1.3. Details of the supplier of the safety data sheet

Manufacturer: WD-40
Brick Close | Kiln Farm
MK11 3LJ Milton Keynes
United Kingdom

Supplier/Distributor: Hashahal, Inc.
HaRav Shalom Jarufi St 4
Rishon LeTsiyon
Tel:03-7612700

1.4. Emergency telephone number

Emergency telephone: Israel Poison Information Center: 04-7771900 (24/7)

SAFETY DATA SHEET

Product name:	WD-40® Multi-Use Product - Aerosol	Page:	2/9
Supersedes date:		Revision:	2020-01-22
Product No.:		SDS-ID:	IL-EN/1.0

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

The product is classified:

SI 2302 (1): Flam. Aerosol 1 - STOT SE 3;H336 - Asp. Tox. 1

2.2. Label elements



Danger

<u>Contains:</u>	Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics
H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.
H336	May cause drowsiness or dizziness.
P102	Keep out of reach of children.
P271	Use only outdoors or in a well-ventilated area.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P251	Do not pierce or burn, even after use.
P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50°C.
P211	Do not spray on an open flame or other ignition source.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331	Do NOT induce vomiting.

Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards

PBT/vPvB: This product does not contain any PBT or vPvB substances.

Other: Aerosol containers can burst violently when heated, due to excess pressure build-up. The product contains volatile, organic compounds which have a photochemical ozone creation potential. The product contains organic solvents. Organic solvents may be absorbed into the body by inhalation and cause permanent damage to the nervous system, including the brain.

SAFETY DATA SHEET

Product name:	WD-40® Multi-Use Product - Aerosol	Page:	3/9
Supersedes date:		Revision:	2020-01-22
Product No.:		SDS-ID:	IL-EN/1.0

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

The product contains: organic solvents, propellants and mineral oil.

SI 2302 (1):

<u>%:</u>	<u>CAS-No.:</u>	<u>EC No.:</u>	<u>Chemical name:</u>	<u>Hazard classification:</u>	<u>Notes:</u>
60-80	-	919-857-5	Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Flam. Liq. 3;H226 STOT SE 3;H336 Asp. Tox. 1;H304	

Reference: The full text for all hazard statements is displayed in section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

Inhalation: Move injured person into fresh air and keep person calm under observation. If uncomfortable: Seek hospital and bring along these instructions.

Skin contact: Remove contaminated clothes and rinse skin thoroughly with water. In case of eczema or other skin disorders: Seek medical attention and bring these instructions.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. Remove any contact lenses and open eyelids widely. If irritation persists: Seek medical attention and bring along these instructions.

Ingestion: Aspiration hazard. Immediately rinse mouth and drink plenty of water or milk. Keep person under observation. Do not induce vomiting. If vomiting occurs, keep head low. Immediate transport to hospital. Bring along these instructions.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects: Be aware that symptoms of lung oedema (shortness of breath) may develop up to 24 hours after exposure.

4.3. Indication of any immediate medical attention and special treatment needed

Medical attention/treatments: Treat symptomatically. If there is any suspicion of aspiration into the lungs either directly or as a result of vomiting, obtain medical advice.

SAFETY DATA SHEET

Product name:	WD-40® Multi-Use Product - Aerosol	Page:	4/9
Supersedes date:		Revision:	2020-01-22
Product No.:		SDS-ID:	IL-EN/1.0

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media: Extinguish with carbon dioxide or dry powder. Cool containers exposed to heat with water spray and remove container, if no risk is involved.
Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards: Aerosol containers can explode when heated, due to excessive pressure build-up. During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Protective equipment for fire-fighters: Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Follow precautions for safe handling described in this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Do not smoke or use open fire, or other sources of ignition.

6.2. Environmental precautions

Environmental precautions: Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Absorb spillage with non-combustible, absorbing material. Clean contaminated area with oil-removing material.

6.4. Reference to other sections

Reference: For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Safe handling advice: Observe good chemical hygiene practices.
Work practice should minimise contact. Avoid inhalation of vapours and spray mists. Avoid contact with skin and eyes.

Technical measures: Do not smoke or use open fire or other sources of ignition.

Technical precautions: Provide adequate ventilation. Provide easy access to water supply or an emergency shower.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures for safe storage: Follow the rules for storage of flammable products.

Storage conditions: Store in a cool and well-ventilated place. Do not store near heat sources or expose to high temperatures.

Specific use(s): No information available.

SAFETY DATA SHEET

Product name:	WD-40® Multi-Use Product - Aerosol	Page:	5/9
Supersedes date:		Revision:	2020-01-22
Product No.:		SDS-ID:	IL-EN/1.0

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits:

<u>CAS-No.:</u>	<u>Chemical name:</u>	<u>As:</u>	<u>Exposure limits:</u>	<u>Type:</u>	<u>Notes:</u>	<u>References:</u>
124-38-9	Carbon dioxide	-	5000 ppm	TWA	-	ACGIH
		-	3000 ppm	STEL	15min	
			0			

8.2. Exposure controls

<u>Engineering measures:</u>	Provide adequate ventilation. Observe Occupational Exposure Limits and minimise the risk of inhalation of vapours.
<u>Personal protection:</u>	Personal protection equipment should be chosen according to the ANSI standards and in discussion with the supplier of the personal protective equipment.
<u>Respiratory equipment:</u>	In case of inadequate ventilation and work of brief duration, use suitable respiratory equipment.
<u>Hand protection:</u>	Risk of contact: Wear protective gloves. It is recommended to use gloves of Viton or nitrile rubber. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Other types of gloves can be recommended by the glove supplier.
<u>Eye protection:</u>	Risk of splashes: Wear goggles/face shield.
<u>Hygiene measures:</u>	Wash hands after handling. Do not eat, drink or smoke when using the product. Change contaminated clothing. Wash contaminated clothing before reuse.
<u>Environmental Exposure Controls:</u>	Not available.

SAFETY DATA SHEET

Product name: WD-40® Multi-Use Product - Aerosol
Supersedes date:
Product No.:

Page: 6/9
Revision: 2020-01-22
SDS-ID: IL-EN/1.0

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance: Aerosol.
Colour: Light brown.
Odour: Characteristic.
pH: Not available.
Melting point / freezing point: < - 66°C (ASTM D 97)
Boiling point: 176°C (liquid phase)
Flash point: 47°C (liquid phase)
Explosion limits: 0.6-8.2% vol. (Main components)
Vapour pressure: 7.2 bar (20°C)
9.4 bar (50°C)
Vapour density: Not available.
Relative density: 0.817 g/ml
Solubility: Insoluble in water.
Partition coefficient
(n-octanol/water): Not available.
Decomposition
temperature (°C): Not available.
Viscosity: Kinematic viscosity: 2-3 mm²/s (40 °C)

9.2. Other information

Other data: Not available.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity: Not reactive.

10.2. Chemical stability

Stability: Stable under normal temperature conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions: None known.

10.4. Conditions to avoid

Conditions to avoid: Avoid heat, flames and other sources of ignition. Avoid exposure to high temperatures or direct sunlight.

10.5. Incompatible materials

Incompatible materials: Strong oxides.

10.6. Hazardous decomposition products

Hazardous decomposition
products: None in particular.

SAFETY DATA SHEET

Product name:	WD-40® Multi-Use Product - Aerosol	Page:	7/9
Supersedes date:		Revision:	2020-01-22
Product No.:		SDS-ID:	IL-EN/1.0

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Low order of acute toxicity, but aspiration following ingestion and vomiting may cause severe and potentially fatal chemical pneumonitis.

Acute Toxicity (Oral): Based on available data, the classification criteria are not met.

Acute Toxicity (Dermal): Based on available data, the classification criteria are not met.

Acute Toxicity (Inhalation): Based on available data, the classification criteria are not met.

Skin Corrosion/Irritation: Based on available data, the classification criteria are not met.

Serious eye damage/irritation: Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive Toxicity: Based on available data, the classification criteria are not met.

STOT - Single exposure: May cause drowsiness or dizziness.

STOT - Repeated exposure: Based on available data, the classification criteria are not met.

Aspiration hazard: May be fatal if swallowed and enters airways.

Inhalation: In high concentrations, vapours and spray mists are narcotic and may cause headache, fatigue, dizziness and nausea.

Skin contact: Prolonged contact may cause redness, irritation and dry skin.

Eye contact: May irritate and cause redness and pain.

Ingestion: Low order of acute toxicity, but aspiration following ingestion and vomiting may cause severe and potentially fatal chemical pneumonitis.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity: Not classified as dangerous to the environment. Oil spills are generally hazardous to the environment.

12.2. Persistence and degradability

Degradability: The degradability of the product has not been stated.

12.3. Bioaccumulative potential

Bioaccumulative potential: No data available on bioaccumulation.

12.4. Mobility in soil

Mobility: No data available.

12.5. Results of PBT and vPvB assessment

PBT/vPvB: This product does not contain any PBT or vPvB substances.

12.6. Other adverse effects

Other adverse effects: An oil film may cause physical damage to organisms and disturb the transportation of oxygen in the intermediate zone between air/water or water/air.

SAFETY DATA SHEET

Product name:	WD-40® Multi-Use Product - Aerosol	Page:	8/9
Supersedes date:		Revision:	2020-01-22
Product No.:		SDS-ID:	IL-EN/1.0

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Dispose of waste and residues in accordance with local authority requirements. Do not puncture or incinerate even when empty.

Contaminated packaging: Empty aerosol containers before disposal.

SECTION 14: TRANSPORT INFORMATION

The product is covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

UN-No: 1950

14.2. UN proper shipping name

Proper Shipping Name: AEROSOLS, flammable

14.3. Transport hazard class(es)

Class: 2

14.4. Packing group

PG: -

14.5. Environmental hazards

Marine pollutant: No.

Environmentally Hazardous No.

Substance:

14.6. Special precautions for user

Special precautions: None known.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Transport in bulk: This product is not intended for transport in bulk.

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulation: SI 2302 part 1 - Dangerous substances and mixtures: Classification, labelling, marking and packaging, with amendments.
Work Safety Regulations (Safety Data Sheets, Classification, Packing, Labeling and Marking of Packages), 5758-1998, with amendments.
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments.
Threshold Limit Values (2018), ACGIH, by the American Conference on Governmental Industrial Hygienists.

SAFETY DATA SHEET

Product name:	WD-40® Multi-Use Product - Aerosol	Page:	9/9
Supersedes date:		Revision:	2020-01-22
Product No.:		SDS-ID:	IL-EN/1.0

SECTION 16: OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions.

Abbreviations and acronyms used in the safety data sheet:

- Flam. Liq. = Flammable liquid.
- Asp. Tox. = Aspiration toxicity.
- PBT = Persistent, Bioaccumulative and Toxic.
- STOT SE = Specific target organ toxicity, single exposure.
- vPvB = very Persistent and very Bioaccumulative.

Additional information:

Classification according to Regulation (EC) No. 1272/2008:
Health Hazards: Calculation method.
Physical Hazards: Expert judgement.

Wording of H-statements:

H222	Extremely flammable aerosol.
H226	Flammable liquid and vapour.
H229	Pressurised container: May burst if heated.
H304	May be fatal if swallowed and enters airways.
H336	May cause drowsiness or dizziness.

The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.

Made by DHI - Environment and Toxicology, Artens Allé 5, DK-2970 Hørsholm, Denmark.
www.dhigroup.com.



Safety Data Sheet
OSHA Hazard Communication Standard
29 CFR 1910.1200. Prepared to GHS Rev 3.

Date of issue: 06.06.2023

Page: 1/8

Trade name: IDEAL Wipes Multi-Purpose Wipes

SECTION 1: Identification

Product identifier used on the label:

Product Name: IDEAL Wipes Multi-Purpose Wipes

Other means of identification:

Product Code Number: 38-500

Recommended use of the chemical and restrictions on use:

Recommended use: Cleaner.

Recommended restrictions: Uses other than those described above.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:

Company Name: IDEAL INDUSTRIES, INC.

Company Address: Becker Place,
Sycamore, IL 60178

Company Telephone: Office hours (Mon – Fri)
7AM - 5 PM (CDT)
(815)895-5181

Company Contact Name: Darryl Docter.

Company Contact Email: IDEAL@IDEALINDUSTRIES.COM

Emergency phone number: 24 HOUR EMERGENCY NUMBER:
(815)895-5181.

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:

Not classified as hazardous under OSHA HSC 2012

GHS Signal word: None Required

GHS Hazard statement(s): None required

GHS Hazard symbol(s): None required

GHS Precautionary statement(s): None required

Hazard(s) not otherwise

Classified (HNOC): None known

Percentage of ingredient(s) of unknown acute toxicity:

Not applicable

IDEAL Wipes Multi-Purpose Wipes

SECTION 3: Composition/information on ingredients

Chemical name	CAS#	Concentration (weight %)
Alcohols, C12-15, ethoxylated	68131-39-5	< 5%
Alcohols, C9-11, ethoxylated	68439-46-3	< 5%

NOTE: The balance of the ingredients is not classified as hazardous or are below the concentration limit to be classified as hazardous, under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

SECTION 4: First-aid measures

Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion:

Inhalation: Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Oxygen should only be administered by qualified personnel. Call a physician if symptoms develop.

Skin contact: Wash immediately with plenty of water and soap for 15 minutes and rinse thoroughly. Remove clothing while washing. Call a physician if symptoms develop.

Eye contact: In case of contact with eyes, flush with water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Do not apply neutralizing agents. Call a physician if symptoms develop.

Ingestion: Do NOT induce vomiting. If swallowed, wash mouth out with water provided the person is conscious. NEVER GIVE LIQUIDS TO AN UNCONCIOUS PERSON. Call a physician if symptoms develop.

Most important symptoms/effects, acute and delayed:
May cause eye irritation.

Indication of immediate medical attention and special treatment needed:
If any symptoms are observed, contact a physician and give them this SDS sheet. Treat symptomatically.

SECTION 5: Fire-fighting measures

Suitable (and unsuitable) extinguishing media:

Suitable extinguishing media: Alcohol-resistant foam, water spray or fog. Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

Harmful vapors may be released in a fire.

IDEAL Wipes Multi-Purpose Wipes

Hazardous combustion products may include the following substances: Carbon monoxide, Carbon dioxide.

Special protective equipment and precautions for fire-fighters:

Use water spray or fog for cooling exposed containers. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Evacuate all non-emergency personnel from area. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

No action shall be taken involving any personal risk or without suitable training. Isolate the area. Evacuate personnel to safe areas. Approach from upwind. Ventilate the area. Keep away from incompatible products. Prevent further leakage or spillage if safe to do so.

Wear chemical resistant personal protective equipment, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions:

Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways.

Methods and material for containment and cleaning up:

Take up liquid spill with inert absorbent material. Scoop absorbed substance into containers. Flush contaminated areas with large amounts of water and direct wash waters to chemical sewer or collect for treatment. Dispose of via a licensed waste disposal contractor. See Section 1 for emergency contact information and Section 13 for waste disposal.

SECTION 7: Handling and storage

Precautions for safe handling:

Take precautionary measures against static discharges. Wear recommended personal protective equipment (See Section 8). Avoid eye and skin contact. Remove contaminated clothing. Keep away from incompatible products. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Conditions for safe storage, including any incompatibles:

Store in a well-ventilated area. Store at ambient temperature. Keep container closed when not in use. Make sure containers are properly labeled.

Incompatible materials: Strong oxidizing agents.

SECTION 8: Exposure controls/personal protection

OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.

IDEAL Wipes Multi-Purpose Wipes

Substance	OSHA PEL	ACGIH TLV	NIOSH IDLH
Alcohols, C12-15, ethoxylated	None known	None known	None known
Alcohols, C9-11, ethoxylated	None known	None known	None known

Appropriate engineering controls:

Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

Concentrations should be monitored hazardous substances in the workplace in accordance with recognized test methods. Mode, method, type and frequency of testing and measurement of harmful factors in the working environment should meet the requirements of local/regional/national laws.

Individual protection measures, such as personal protective equipment:

Eye/face protection: Wear safety glasses or chemical safety goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US).

Skin and Hand protection: Wear impervious gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory protection: None normally required. In the case of dust or aerosol formation use respirator with an approved filter.

General hygiene considerations: Eye wash fountains should be located in the work areas. Take off contaminated clothing and shoes immediately. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

SECTION 9: Physical and chemical properties

Appearance (physical state, color, etc.):

Physical state: Liquid.

Color: Clear.

Odor: Citrus.

Odor threshold: Not determined.

pH: 5.0 - 8.0

Melting point/freezing point: Not determined.

Initial boiling point and boiling range: 212 F.

Flash point: > 300 F.

Evaporation rate: Not determined.

Flammability (solid, gas): Not applicable

Upper/lower flammability or explosive limits

IDEAL Wipes Multi-Purpose Wipes

Flammability limit – lower (%):	Not determined.
Flammability limit – upper (%):	Not determined.
Explosive limit – lower (%):	Not determined.
Explosive limit – upper (%):	Not determined.
Vapor pressure:	Not determined.
Vapor density:	Not determined.
Relative density:	1.
Solubility (ies):	Dispersible in water.
Partition coefficient (n-octanol/water):	Not determined.
Auto-ignition temperature:	Not determined.
Decomposition temperature:	Not determined.
Viscosity:	Not determined.

SECTION 10: Stability and reactivity

Reactivity:	Not expected to be chemically reactive.
Chemical stability:	Stable under recommended storage and handling conditions.
Possibility of hazardous reactions:	Hazardous reactions not anticipated.
Conditions to avoid:	None known.
Incompatible materials:	Avoid contact with strong oxidizers.
Hazardous decomposition Products:	None expected, however in case of fire, carbon oxides may be released.

SECTION 11: Toxicological information

Information on likely routes of exposure:

Inhalation:	Expected to be a route of exposure
Ingestion:	Expected to be a route of exposure
Skin:	Expected to be a route of exposure
Eyes:	Expected to be a route of exposure
Target Organs:	Eyes

Symptoms related to the physical, chemical, and toxicological characteristics:

May cause eye irritation.

Delayed and immediate effects and chronic effects from short or long-term exposure:

No additional information available.

Numerical measures of toxicity (such as acute toxicity estimates):

Substance	Test Type (species)	Value
Alcohols, C12-15, ethoxylated	LD ₅₀ Oral (Rat)	> 2000 mg/kg
	LD ₅₀ Dermal (Rabbit)	2500 mg/kg
	LC ₅₀ Inhalation (Rat)	None known

IDEAL Wipes Multi-Purpose Wipes

Alcohols, C9-11, ethoxylated	LD ₅₀ Oral (Rat)	3488 mg/kg
	LD ₅₀ Dermal (Rabbit)	> 2000 mg/kg
	LC ₅₀ Inhalation (Rat)	> 1600mg/m ³

Acute Toxicity:	Does not meet the criteria for classification.
Skin corrosion/irritation:	Does not meet the criteria for classification.
Serious eye damage/eye irritation:	Does not meet the criteria for classification.
Respiratory sensitization:	Does not meet the criteria for classification.
Skin sensitization:	Does not meet the criteria for classification.
Germ cell mutagenicity:	Does not meet the criteria for classification.
Carcinogenicity:	Does not meet the criteria for classification.
Reproductive toxicity:	Does not meet the criteria for classification.
Specific target organ toxicity-Single exposure:	Does not meet the criteria for classification.
Specific target organ toxicity-Repeat exposure:	Does not meet the criteria for classification.
Aspiration hazard:	Does not meet the criteria for classification.

Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA:

Component	IARC	NTP	ACGIH	OSHA
Alcohols, C12-15, ethoxylated	Not listed	Not listed	Not listed	Not listed
Alcohols, C9-11, ethoxylated	Not listed	Not listed	Not listed	Not listed

SECTION 12: Ecological information

Ecotoxicity (aquatic and terrestrial, where available):

Harmful to aquatic life with long lasting effects

Substance	Test Type	Species	Value
Alcohols, C12-15, ethoxylated	LC ₅₀	Fish - Pimephales promelas	0.628 mg/L 96h
	EC ₅₀	Aquatic Invertebrates - Daphnia magna	0.143 mg/L 48h
	EC ₅₀	Algae - Raphidocelis subcapitata	0.031 mg/L 72h

IDEAL Wipes Multi-Purpose Wipes

Alcohols, C9-11, ethoxylated	LC ₅₀	Fish – Oncorhynchus mykiss	5 - 7 mg/L 96h
	EC ₅₀	Aquatic Invertebrates – Daphnia magna	2.5 mg/L 48h
	ErC ₅₀	Algae - Desmodesmus subspicatus	1.978 mg/L 72h

Persistence and Degradability:

Expected to be readily biodegradable

Bioaccumulative Potential:

Bioaccumulation in organisms is negligible, due to biotransformation and excretion of alcohol ethoxylates.

Mobility in Soil:

No data available

Other adverse effects (such as hazardous to the ozone layer):

No data available

SECTION 13: Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging.

Product

Dispose of waste materials in accordance with applicable local and national laws and regulations. Where possible, recycling is preferred to disposal or incineration. Contact the proper local authorities.

Contaminated packaging

Since emptied containers retain product residue, follow label warnings even after container is emptied. Dispose of as unused product.

SECTION 14: Transport Information

US Department of Transportation Classification (49CFR)

Not regulated under DOT.

IMDG (Transport by sea)

Not regulated under IMDG.

IATA (Country variations may apply)

Not regulated under IATA.

Environmental hazards

Marine pollutant: No

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

No further relevant information is available.

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.

IDEAL Wipes Multi-Purpose Wipes

None known.

SECTION 15: Regulatory Information

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is NOT classified as hazardous under OSHA.

Toxic Substances Control Act (TSCA) - All components are listed on the TSCA inventory or are exempted.

CERCLA RQ (lbs) Ingredients (> 0.1%):

None of the components are listed.

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311, 312 and 313:

Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A) (> 0.1%):

None of the components are listed.

Section 311/312 (40 CFR 370) (> 0.1%):

Not applicable

Section 313 Toxic Release Inventory (40 CFR 372) (> 0.1%):

None of the components are listed.

STATE REGULATIONS:

This SDS contains specific health and safety data that is applicable for state requirements. For details on your regulatory requirements, you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986: None of the components are listed.

Massachusetts Right to Know:

None of the components are listed on the Massachusetts Right to Know list.

New Jersey Right to Know:

None of the components are listed on the New Jersey Right to Know list.

Pennsylvania Right to Know:

None of the components are listed on the Pennsylvania Right to Know list.

SECTION 16: Other Information

Revision Date: June 6, 2023

To the best of our knowledge, the information contained herein is accurate. However IDEAL INDUSTRIES INC. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.



Safety Data Sheet
OSHA Hazard Communication Standard
29 CFR 1910.1200. Prepared to GHS Rev 3.

Date of issue: 04.09.2023

Page: 1/7

Trade name: YELLOW 77 Wire Pulling Lubricant

SECTION 1: Identification

Product identifier used on the label:

Product Name: YELLOW 77 Wire Pulling Lubricant

Other means of identification:

Product Code Number: 31-358, 31-351, 31-355, 31-365

Recommended use of the chemical and restrictions on use:

Recommended use: Wire Pulling Lubricant

Recommended restrictions: Uses other than those described above.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:

Company Name: IDEAL INDUSTRIES, INC.

Company Address: Becker Place,
Sycamore, IL 60178

Company Telephone: Office hours (Mon – Fri)
7AM - 5 PM (CDT)
(815)895-5181

Company Contact Name: Darryl Docter.

Company Contact Email: IDEAL@IDEALINDUSTRIES.COM

Emergency phone number: 24 HOUR EMERGENCY NUMBER:
(815)895-5181.

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:

Not classified as hazardous under OSHA HSC 2012

GHS Signal word: None Required

GHS Hazard statement(s): None required

GHS Hazard symbol(s): None required

GHS Precautionary statement(s): None required

Hazard(s) not otherwise

Classified (HNOC): None known

Percentage of ingredient(s) of unknown acute toxicity:

Not applicable

YELLOW 77 Wire Pulling Lubricant

SECTION 3: Composition/information on ingredients

None of chemical raw materials contained in this formulation are considered hazardous under the OSHA Hazard Communication Standard and therefore do not need reporting in this section.

SECTION 4: First-aid measures

Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion:

Inhalation: Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Oxygen should only be administered by qualified personnel. Seek medical advice.

Skin contact: Wash with water and soap and rinse thoroughly. Seek medical advice if irritation or pain develops.

Eye contact: In case of contact with eyes, flush with water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician if symptoms develop.

Ingestion: Do NOT induce vomiting. If swallowed, wash mouth out with water provided the person is conscious. NEVER GIVE LIQUIDS TO AN UNCONCIOUS PERSON. Call a physician if symptoms develop.

Most important symptoms/effects, acute and delayed:

None known

Indication of immediate medical attention and special treatment needed:

If any symptoms are observed, contact a physician and give them this SDS sheet. Treat symptomatically.

SECTION 5: Fire-fighting measures

Suitable (and unsuitable) extinguishing media:

Suitable extinguishing media: Dry chemical, foam, water spray, carbon dioxide.

Unsuitable extinguishing media: None known

Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

None expected.

Hazardous combustion products may include the following substances: Carbon oxides

Special protective equipment and precautions for fire-fighters:

Use water spray or fog for cooling exposed containers. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Evacuate all non-emergency personnel from area. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

YELLOW 77 Wire Pulling Lubricant

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through the spilled material. Minimize contact with skin or eyes. Provide adequate ventilation. Wear appropriate protective equipment, as conditions warrant (see Section 8).

See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions:

Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways.

Methods and material for containment and cleaning up:

Collect spillage and transfer to a lidded container for disposal or recovery. Dispose of via a licensed waste disposal contractor. See Section 1 for emergency contact information and Section 13 for waste disposal.

SECTION 7: Handling and storage

Precautions for safe handling:

Wear recommended personal protective equipment (See Section 8). Provide adequate ventilation in process areas. Avoid contact with eyes, skin and clothing. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Conditions for safe storage, including any incompatibles:

Keep only in original container. Store in a dry, well-ventilated place. Keep container closed when not in use. Make sure containers are properly labeled. Store away from incompatible materials.

Incompatible materials: Oxidizing agents.

SECTION 8: Exposure controls/personal protection

OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.

None known.

Appropriate engineering controls:

Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

Provide eyewash station. Eye wash fountain and emergency showers are recommended. Concentrations should be monitored hazardous substances in the workplace in accordance with recognized test methods. Mode, method, type and frequency of testing and measurement of harmful factors in the working environment should meet the requirements of local/regional/national laws.

YELLOW 77 Wire Pulling Lubricant

Individual protection measures, such as personal protective equipment:

Eye/face protection: None required but the use of safety glasses is recommended. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US).

Skin and Hand protection: None required but use of chemical resistant (rubber, nitrile) gloves is recommended. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory protection: None required. Use supplied-air respiratory protection in enclosed spaces, if needed.

General hygiene considerations: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

SECTION 9: Physical and chemical properties

Appearance (physical state, color, etc.):

Physical state: Paste.

Color: Yellow

Odor: Slight odor.

Odor threshold: Not determined.

pH: 6.5 - 8

Melting point/freezing point: Not determined.

Initial boiling point and boiling range: 212 °F (100 °C)

Flash point: None.

Evaporation rate: Not determined

Flammability (solid, gas): Not applicable

Upper/lower flammability or explosive limits

Flammability limit – lower (%): Not determined

Flammability limit – upper (%): Not determined

Explosive limit – lower (%): Not determined

Explosive limit – upper (%): Not determined

Vapor pressure: Not determined

Vapor density: Not determined

Relative density: 0.97 – 0.99

Solubility (ies): Not determined.

Partition coefficient (n-octanol/water): Not determined.

Auto-ignition temperature: Not determined

Decomposition temperature: Not determined

Viscosity: 810000 @ 1rpm 158F 87500cps @ 1 rpm 77F

YELLOW 77 Wire Pulling Lubricant

SECTION 10: Stability and reactivity

Reactivity:	Not reactive under recommended storage and handling conditions.
Chemical stability:	Stable under recommended storage and handling conditions.
Possibility of hazardous reactions:	None known.
Conditions to avoid:	None known.
Incompatible materials:	Oxidizing agents
Hazardous decomposition Products:	None expected, although in a fire, Carbon oxides will be formed.

SECTION 11: Toxicological information

Information on likely routes of exposure:

Inhalation:	Expected to be a route of exposure
Ingestion:	Expected to be a route of exposure
Skin:	Expected to be a route of exposure
Eyes:	Expected to be a route of exposure

Target Organs: Eyes, Skin, Gastrointestinal system

Symptoms related to the physical, chemical, and toxicological characteristics:

None expected.

Delayed and immediate effects and chronic effects from short or long-term exposure:

None known.

Numerical measures of toxicity (such as acute toxicity estimates): None known.

Acute Toxicity:	Does not meet the criteria for classification
Skin corrosion/irritation:	Does not meet the criteria for classification
Serious eye damage/eye irritation:	Does not meet the criteria for classification
Respiratory sensitization:	Does not meet the criteria for classification
Skin sensitization:	Does not meet the criteria for classification
Germ cell mutagenicity:	Does not meet the criteria for classification
Carcinogenicity:	Does not meet the criteria for classification.
Reproductive toxicity:	Does not meet the criteria for classification
Specific target organ toxicity-Single exposure:	Does not meet the criteria for classification
Specific target organ toxicity-Repeat exposure:	Does not meet the criteria for classification,
Aspiration hazard:	Does not meet the criteria for classification

Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA: None listed.

YELLOW 77 Wire Pulling Lubricant

SECTION 12: Ecological information

Ecotoxicity (aquatic and terrestrial, where available):

Not expected to be toxic to the aquatic environment.

Persistence and Degradability:

No information available

Bioaccumulative Potential:

No information available.

Mobility in Soil:

No information available.

Other adverse effects (such as hazardous to the ozone layer):

No information available.

SECTION 13: Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging.

Product

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification. Dispose via a licensed waste disposal contractor. Observe all federal, state/provincial and municipal regulations.

Contaminated packaging

Since emptied containers retain product residue, follow label warnings even after container is emptied. Empty containers should be properly labeled to supplier or everywhere there is a recovery program.

SECTION 14: Transport Information

US Department of Transportation Classification (49CFR)

Not regulated under DOT.

IMDG (Transport by sea)

Not regulated under IMDG.

IATA (Country variations may apply)

Not regulated under IATA.

Environmental hazards

Marine pollutant: No

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

No further relevant information available.

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.

None known

YELLOW 77 Wire Pulling Lubricant

SECTION 15: Regulatory Information

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is not classified as hazardous under OSHA.

Toxic Substances Control Act (TSCA) - All substances in this product are listed, as required or are exempt from the TSCA inventory.

CERCLA RQ (lbs) Ingredients (> 0.1%):

None listed.

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311, 312 and 313:

Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A) (> 0.1%):

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Section 311/312 (40 CFR 370) (> 0.1%):

Not applicable.

Section 313 Toxic Release Inventory (40 CFR 372) (> 0.1%):

None listed.

STATE REGULATIONS:

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements, you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986: None listed.

Massachusetts Right to Know:

No components are listed on the Massachusetts Right to Know list

New Jersey Right to Know:

No components are listed on the New Jersey Right to Know list

Pennsylvania Right to Know:

No components are listed on the Pennsylvania Right to Know list

SECTION 16: Other Information

Revision Date: April 9, 2023

To the best of our knowledge, the information contained herein is accurate. However IDEAL INDUSTRIES INC. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.