

Miller Mechanical

SAFETY AND HEALTH MANUAL

MARCH 2015

TABLE OF CONTENTS

| | |
|--|------|
| PART 1 GENERAL SAFETY AND HEALTH MANUAL----- | 1.1 |
| Policy Statement----- | 1.2 |
| Goal and Purpose----- | 1.2 |
| Objectives----- | 1.2 |
| Overview of Safety and Health Manual----- | 1.2 |
| Responsibilities----- | 1.3 |
| Management----- | 1.3 |
| Safety Coordinator----- | 1.3 |
| Safety Administrator----- | 1.3 |
| Project Managers----- | 1.4 |
| Project Managers and Supervisors----- | 1.4 |
| Supervisors----- | 1.4 |
| Drivers----- | 1.5 |
| Operators----- | 1.5 |
| Employees----- | 1.5 |
| Subcontractors, Vendors and Suppliers----- | 1.5 |
| Safety and Health Procedures----- | 1.6 |
| Accountability----- | 1.6 |
| Enforcement - Progressive Discipline Procedures----- | 1.6 |
| Bidding / Estimating----- | 1.7 |
| Pre - Planning----- | 1.7 |
| Employee Participation----- | 1.7 |
| Site Safety Inspections----- | 1.7 |
| Accident Investigation and Accident Prevention----- | 1.7 |
| Personal Protective Equipment (PPE)----- | 1.7 |
| New and Re-Hired Employee Orientation----- | 1.7 |
| Safety Training----- | 1.8 |
| Documentation----- | 1.8 |
| Emergency and First Aid----- | 1.9 |
| Emergency Procedures----- | 1.9 |
| Fire----- | 1.9 |
| First Aid----- | 1.9 |
| Accident Reporting and Record Keeping----- | 1.10 |
| Modified - Work Program----- | 1.10 |
| Subcontractor Selection----- | 1.10 |
| Safety and Health Manual Revision----- | 1.10 |
| Safety Bulletin Board----- | 1.10 |
| Distribution of the Safety and Health Manual----- | 1.11 |
| Glossary of Common Terms----- | 1.11 |
| PART 2 JOB SITE SPECIFIC SAFETY RULES----- | 2.1 |
| Abrasive Grinding ----- | 2.2 |
| Access / Egress ----- | 2.2 |
| Aerial Lifts ----- | 2.2 |
| Air Tools ----- | 2.2 |
| Clothing ----- | 2.3 |
| Compressed Air, use of ----- | 2.3 |
| Compressed Gas Cylinders ----- | 2.3 |
| Concrete and Masonry Construction ----- | 2.3 |
| Confined Spaces ----- | 2.4 |
| Cranes ----- | 2.4 |
| Demolition ----- | 2.5 |
| Drinking Water ----- | 2.5 |
| Electrical - General ----- | 2.5 |
| Employee / Subcontractor Conduct ----- | 2.6 |

| | |
|---|------|
| Excavation and Trenching | 2.6 |
| Explosives and Blasting | 2.7 |
| Eye and Face Protection | 2.7 |
| Fall Protection | 2.8 |
| Fire Protection | 2.8 |
| First Aid | 2.8 |
| Flag Personnel | 2.9 |
| Flammable and Combustible Liquids | 2.9 |
| Foot Protection | 2.9 |
| Forklift Safety | 2.9 |
| Gases, Vapors, Fumes, Dusts, and Mists | 2.10 |
| Hand Protection | 2.10 |
| Hand Tools | 2.10 |
| Hard Hats | 2.10 |
| Hearing Protection | 2.10 |
| Heating Devices, Temporary | 2.11 |
| Heat Stress | 2.11 |
| Housekeeping / Clean-up..... | 2.11 |
| Ladders | 2.11 |
| Lasers | 2.12 |
| Lighting | 2.12 |
| Liquefied Petroleum Gas | 2.12 |
| Lock Out / Tag Out | 2.12 |
| Manual Lifting | 2.13 |
| Motor Vehicles and Construction Equipment | 2.13 |
| Personal Protective Equipment | 2.13 |
| Powder - Actuated Tools | 2.14 |
| Power Transmission, Mechanical | 2.14 |
| Protection of the Public | 2.14 |
| Respiratory Protection | 2.14 |
| Rules for Drivers of Vehicles | 2.14 |
| Rules for Operators | 2.15 |
| Saws | 2.15 |
| Scaffolds | 2.16 |
| Scissor Lifts | 2.16 |
| Signs | 2.17 |
| Smoking Policy | 2.17 |
| Steel Erection | 2.17 |
| Storage | 2.17 |
| Toilets | 2.17 |
| Washing Facilities | 2.17 |
| Welding, Cutting and Heating | 2.18 |
| Wire Ropes, Chains, Ropes and other Rigging Equipment | 2.18 |
| Working / Walking under Suspended Loads | 2.18 |

PART 3 SHOP / YARD / OFFICE SPECIFIC SAFETY RULES.....3.1

| | |
|--------------------------------|-----|
| Abrasive Grinding | 3.2 |
| Access / Egress | 3.2 |
| Aerial Lifts | 3.2 |
| Air Tools | 3.2 |
| Clothing | 3.3 |
| Compressed Air, use of | 3.3 |
| Compressed Gas Cylinders | 3.3 |
| Confined Spaces | 3.3 |
| Cranes and Hoist | 3.3 |
| Drinking Water | 3.4 |
| Electrical - General | 3.4 |
| Employee Conduct | 3.4 |
| Exit Routes and Signage..... | 3.4 |

| | |
|---|------|
| Eye and Face Protection ----- | 3.5 |
| Fall Protection ----- | 3.5 |
| Fire Protection ----- | 3.5 |
| First Aid ----- | 3.6 |
| Flammable and Combustible Liquids ----- | 3.5 |
| Foot Protection ----- | 3.6 |
| Forklift Safety ----- | 3.7 |
| Gases, Vapors, Fumes, Dusts, and Mists ----- | 3.7 |
| Hand Tools ----- | 3.7 |
| Hard Hats ----- | 3.7 |
| Hearing Protection ----- | 3.7 |
| Housekeeping / Clean-up----- | 3.7 |
| Ladders ----- | 3.8 |
| Lasers ----- | 3.8 |
| Lighting ----- | 3.8 |
| Liquefied Petroleum Gas ----- | 3.8 |
| Lock Out / Tag Out ----- | 3.9 |
| Manual Lifting ----- | 3.9 |
| Office Safety ----- | 3.9 |
| Personal Protective Equipment ----- | 3.10 |
| Respiratory Protection ----- | 3.10 |
| Rules for Drivers of Vehicles ----- | 3.10 |
| Rules for Operators ----- | 3.11 |
| Scaffolds ----- | 3.11 |
| Scissor Lifts ----- | 3.11 |
| Smoking Policy ----- | 3.12 |
| Storage ----- | 3.12 |
| Toilets ----- | 3.12 |
| Washing Facilities ----- | 3.12 |
| Welding, Cutting, Heating and Brazing----- | 3.12 |
| Wire Ropes, Chains, Ropes and other Rigging Equipment ----- | 3.14 |

PART 4 SPECIFIC SAFETY AND HEALTH POLICIES, PROGRAMS AND PLANS----- 4.1

| | |
|--|------|
| Substance Abuse Policy----- | 4.2 |
| Hazard Communication Program----- | 4.3 |
| Bloodborne Pathogen Policy ----- | 4.6 |
| Fall Protection Policy----- | 4.12 |
| Confined Space Plan----- | 4.14 |
| Respirator Policy----- | 4.17 |
| Lock Out / Tag Out Program----- | 4.20 |
| Environmental Program----- | 4.22 |
| Vehicle Safety Policy----- | 4.32 |
| Cell Phone and Electronic Device Policy----- | 4.33 |

PART 5 EMPLOYEE SAFETY ORIENTATION PACKAGE

PART 6 COMPANY SAFETY FORMS

PART 7 SAFETY DATA SHEETS (SDS)

SAFETY MANUAL REVIEW AND UPDATE LOG

Manual Approved and Implemented

MARCH 2015

Review and Update

MARCH 2016

PART 1

GENERAL SAFETY AND HEALTH MANUAL

Part 1 General Safety and Health Manual is a section of overall safety operations and guidelines to meet OSHA, Insurance and Company Safety objectives. Parts 2 through 7 are sections to back-up and support the overall management and documentation of the Company Safety Program.

Policy Statement

Miller Mechanical (from this point forward referred to as the “Company”) has a moral and business obligation to provide a safe work environment for its employees, subcontractors and the public. It is, therefore, the Company's policy to abide by the Occupational Safety and Health Standards and to initiate and maintain appropriate practices that promote safety in the work environment.

All management and supervisory personnel are charged with the responsibility for planning safety into each work task and for preventing the occurrence of incidents and/or controlling conditions / actions that could lead to occupational injuries or illness. The ultimate success of a safety program depends upon the full cooperation of each individual employee. Management at the Company assumes the responsibility and is prepared to take the necessary actions to see that safety rules and practices are enforced.

Our goal is to totally eliminate accidents from our operations.

Goal and Purpose

The goal of Miller Mechanical is to ensure that safety and health efforts are so successful that accidents and injuries are eliminated.

The purpose of this Safety and Health Manual is to provide a set of policies and requirements that management and employees can use as guidelines in their efforts to ensure a safe working environment and reach the company's goal of zero accidents and injuries.

Objectives

To reflect management's commitment to provide a safe and healthy working environment for all employees, subcontractors and vendors.

To establish a set of policies and requirements that management and employees can use as guidelines in their efforts to ensure a safe and healthy working environment.

To initiate immediate corrective action if safety deficiencies are discovered.

To be in compliance with federal, state and local safety and health regulations.

To be in compliance with our clients' safety and health rules and regulations.

Achieve our goals of ...zero injuries
 ...zero lost time accidents
 ...zero O.S.H.A. violations

Overview of Safety and Health Manual

This Safety and Health Manual is presented as a guide for achieving a high degree of safety within all areas of the company. It is not intended to cover all situations concerning safety, which may arise. Rather, it is presented to instill in each employee an understanding of the importance of safety and the aspiration that the employee will expand his/her awareness to safety and apply it to all aspects of their work.

The OSHA CFR 29 Part 1910 Book and OSHA CFR 29 Part 1926 Book are used and referenced when additional standards, additional graphs or additional charts are required.

Responsibilities

Management, Project Managers, Supervisors, subcontractors, vendors, visitors and all employees are responsible for the compliance with this Safety and Health Manual.

A summary of each party's responsibilities is outlined below.

Management

It is the responsibility of management to establish rules and programs designed to promote safety and health; to make known to all employees the established rules and programs and to impress upon all employees the responsibility and accountability of each individual to maintain a safe and healthful workplace.

Management will ensure that appropriate safety and health training is provided, that inspections are performed and that accident investigations are conducted and reviewed.

Management will designate a person to administer the Safety and Health Program, which includes the general Safety and Health Manual and any specific Safety and Health Manuals.

Management will observe, enforce and follow all safety rules, regulations and policies.

Safety Officer

- 1) Answer questions concerning the Safety and Health Manual.
- 2) Keep all copies of the Safety and Health Manual up-to-date.
- 3) Keep all documentation concerning the Safety and Health Manual up-to-date.
- 4) Coordinate the items below

Safety Officer

Name: Steve Lane
Telephone: 770-952-3864
Cell: 813-918-0335

Human Resources Manager

Name: TBD
Telephone: TBD
Cell: TBD

Safety Officer

The Safety Officer is responsible for the complete administration of Miller Mechanical. Safety Manual and the following items.

- a) Monitor all job sites / areas for compliance with Miller Mechanical Safety Manual.
- b) Assure safety inspections (self & outsiders) are conducted.
- c) Disciplinary and enforcement procedures.
- d) Safety training to company employees.

Safety Administrator (Human Resources Manager)

The Safety Administrator is responsible for providing complete support to the Safety Officer and the complete Safety Program, including the following items:

- a) Administrative support for all safety related items and activities.
- b) Maintain OSHA 301, 300 & 300A forms current.
- c) Monitor Motor Vehicle Reports (MVR).
- d) Monitor Safety Training Requirements.
- e) Safety Board information upkeep.
- f) Publish Safety Information.
- g) Employee safety training records.
- h) Employee orientation packages.
- i) Insurance coordinating.
- j) Accident Tracking.

Project Managers

Project Managers are responsible for maintaining safe and healthful working conditions under their supervision.

- a) Project Managers will review all written warnings and take appropriate disciplinary action.
- b) Project Managers are responsible for requiring conformance to safety and health standards by subcontractors.
- c) Project Managers are responsible for providing the general public, protection from company operations.

Project Managers and Supervisors

Project Managers and Supervisors are responsible for coordinating their safety efforts with each other.

- a) Project Managers and Supervisors are responsible for pre - planning the job site(s).
- b) Project Managers and Supervisors are responsible for reviewing all Accident Reports.
- c) Project Managers and Supervisors are responsible for seeing that preventative measures are taken to ensure that Accidents do not occur.
- d) The Project Managers and Supervisors are responsible for issuing verbal warnings and written warnings when safety and health rules, regulations or company policies are violated and submitting reports for review to the Safety Officer.

Supervisors

Supervisors are responsible for maintaining safe and healthful working conditions on their job site(s).

- a) Supervisors are responsible for carrying out the planning of the Project Managers and making the Project Managers aware of any new conditions or hazards that may arise.
- b) Supervisors will continually conduct (at least daily) inspections of job site(s) material or equipment. The Supervisors conducting these inspections must be capable of identifying existing and predictable hazards in the work environment, of identifying working conditions which are unsanitary, hazardous, or dangerous to employees, and of identifying unsafe behavior. In addition, Supervisors must have the authority to take prompt corrective measures to eliminate or control hazards and correct unsafe behavior.
- c) Supervisors will ensure that prompt medical attention for any injured employee is available, and will report all accidents and injuries to Project Managers and/or the Safety Officer.
- d) Supervisors will ensure personnel protective equipment is available and is being used correctly. Training on PPE is provided, on the job site, by the Supervisors.
- e) Supervisors are responsible for filling out the Accident Report within 24 hours of the Accident.
- f) Supervisors are responsible for having the appropriate up-to-date SDS sheets on the job site.
- g) Supervisors are responsible for all weekly safety training. All weekly safety training shall be documented & maintained at each job site or main office.
- h) Supervisors are responsible for ensuring all safety rules & regulations are adhered, to on the job site, by ALL employees, workers, visitors, subcontractors, etc.
- i) Supervisors are responsible for submitting Accident Reports and reviewing all Accidents with the Safety Officer.

Drivers

Drivers are expected to drive safely at ALL times. Drivers will abide by all federal and state laws regarding the safe operation of vehicles on public roads.

Drivers must meet the requirements outlined in the section "Rules for Drivers".

Operators

Operators are expected to operate their equipment safely at ALL times.

Operators of heavy equipment must meet the requirements in the section "Rules for Operators".

Employees

It is the responsibility of all employees to work safely to ensure their own safety as well as the safety of coworkers and others. Employees are encouraged to ask for assistance when unsure about how to safely perform any task.

- a) Employees are required to report any unsafe acts or conditions to their supervisor. Management will not take any reprimand against employees for such notifications.
- b) Employees are required to attend and participate in all safety meetings and/or safety training sessions that the company conducts.
- c) Employees are responsible for using and maintaining all personal protective equipment that is provided by the employer or the employee.
- d) Employees shall follow all OSHA and company safety rules, regulations and/or policies.
- e) Employees are required to sign an "End of Week - Employee Injury Statement".

Subcontractors, Vendors and Suppliers

All subcontractors, vendors and suppliers shall abide by all safety rules.

All subcontractors, vendors and suppliers are required to provide competent persons and/or adequate supervision to perform all activities for Miller Mechanical. in the safest manner possible.

The Miller Mechanical Safety Manual and the OSHA standards are the minimum requirements.

Safety and Health Procedures

The safety and health goal and objectives will be realized by implementation of policies outlined under the following headings:

- Accountability
- Enforcement - Progressive Discipline Procedures
- Bidding / Estimating
- Pre - Planning
- Employee Participation
- Site Safety Inspections
- Accident Investigations and Prevention
- Personal Protection Equipment
- New & Re - Hired Employee Orientation
- Safety Training
- Technical Support
- Documentation

Accountability

Project Managers and Supervisors are accountable for improving the safety performance of personnel under their supervision.

A Safety Committee will be established.

It is the duty of the Safety Committee to see that the company has the cleanest safety record possible. The Safety Officer is always available to consult with any employee who has safety concerns. The Safety Officer shall answer any questions an employee may have and resolve any safety problems that arise.

If any employee has knowledge of any existing safety hazard, and they have brought it to their supervisor's attention without results, please respond to the Safety Officer, and the situation will be investigated.

This safety program is presented as a guide for achieving a high degree of safety within all areas of the company. It is not intended to cover all situations concerning safety, which may arise. Rather, it is presented to instill in each employee an understanding of the importance of safety and the aspiration that the employee will expand his/her awareness to safety and apply it to all aspects of their work.

Enforcement - Progressive Discipline Procedures

Project Managers, Supervisors, or any employee found violating any of the safety and health policies outlined in the Safety and Health Manual, or participating in any other hazardous activity on the job site or while performing activities for the company, will be subject to the following progressive discipline procedures.

First Violation: A written warning, followed by an explanation and/or training.

Second Violation: A written warning, management review of written warning; followed by one of the following actions:

- Suspension, without pay
- Subject to termination

Third Violation: Subject to termination

Exceptions:

1. The progressive discipline procedures will be suspended if an employee commits a gross violation of these Safety and Health Manuals or participates in an unsafe act that poses an immediate danger to the life and health of themselves or other employees.
2. If an employee commits a substance abuse violation, (as described in the Substance Abuse Program) the employee is subject to the disciplinary measures outlined under the Substance Abuse Program.

Bidding / Estimating

Bidding / estimating will include consideration for the elimination or control of safety and health hazards, and all items in the company Safety and Health Manual.

Pre - Planning

The pre - planning of jobs will include attention to the elimination or control of safety and health hazards, and all items in the company Safety and Health Manual.

Employee Participation

Employees are encouraged to make the company aware of any safety and health issues or concerns.

Employees are encouraged to make recommendations for the elimination or control of safety and health hazards.

All safety and health issues brought up by the employees will be reviewed and responded to by management in a timely manner.

Site Safety Inspections

Site safety inspections will be conducted on a regular basis to determine job site hazards, methods to eliminate or control the hazards and ensure that safe work practices are being implemented.

Accident Investigation and Accident Prevention

Accidents and Incidents will be investigated to prevent future mishaps. The purpose of an accident investigation is fact finding, not fault finding; however, the cause of the accident must be reported objectively.

- a) All Accidents and Incidents must be reported to the Safety Officer.
- b) An Accident Investigation Report must be filled out for each Accident by the Supervisor of the employee involved in the Accident.
- c) All Accidents and Incidents will be reviewed by the Safety Officer to determine future prevention measures.

Definitions:

Accident: An "accident" is one in which 1) a fatality occurs, or 2) an individual in the accident immediately receives medical treatment, whether on-site or away from the accident scene, 3) a driver of a commercial motor vehicle receives a citation for a moving traffic violation arising from an accident or 4) there is damage to company property, the property of others or public property.

Incident: An "incident" or "near miss" is an event that could have resulted in an accident.

Personal Protective Equipment (PPE)

All employees will be trained on the proper use and maintenance of personal protective equipment.

New and Re-Hired Employee Orientation

The Safety and Health Manual will be reviewed with all new hired and/or re-hired employees prior to beginning work. New hired and/or re-hired employees will be required, prior to beginning work, to sign a statement of employee understanding regarding the Safety and Health Manual.

New employees will be required to view the NAPHCC video on the hazardous materials program.

Safety Training

Safety training will be documented and entered into employee's personnel files and safety records.

Company Wide Safety Training

Company wide safety training will be conducted on an annual basis, or as deemed necessary by the Safety Officer. These safety training meetings will cover company wide safety and health topics as well as OSHA required safety training.

Project Managers and Supervisors Safety Training

Project Managers and Supervisors meetings will be conducted on a regularly scheduled basis. Some of the topics for these meetings will focus on their responsibility as outlined in the Safety and Health Manual.

They will be trained on hazard identification, hazard control and training other employees, subcontractors and vendors on safe work practices and procedures.

On - Site Safety Training

On - site safety training will cover such topics as:

- a) Safety rules and/or regulations.
- b) Site specific hazards.
- c) Safe work practices.
- d) Procedures being used to eliminate specific hazards.
- e) Safety training on personal protective equipment.
- f) Other safety topics the Supervisors or the Safety Officer deem necessary.

Weekly Safety Training

Supervisors are responsible for weekly safety training on site specific safety and health hazards.

Supervisors document each session topic and attendance is recorded.

Specialized and/or Specific Safety Training

Specialized safety training will be conducted on an "as needed" basis by the company for specific job related functions.

Technical Support

Outside technical support, for assistance, to eliminate or control safety and health hazards will be provided on an "as needed" basis by the company.

Documentation

All documentation relating to the Safety and Health Manual will be kept up-to-date and filed in such a manner that it will be readily accessible. Project Managers and Supervisors are required to file all appropriate documentation in a timely manner with the Safety Officer.

Emergency and First Aid

Supervisors, with the aid of the Safety Officer, will determine the emergency phone numbers for each job site. Supervisors will communicate the emergency numbers in such a manner that every employee on a job site will be aware of the location of the emergency phone numbers.

Job sites should have at least 1 (one) person trained in emergency 1st Aid & CPR.

Emergency Procedures

Supervisors should instruct employees on emergency procedures for the specific job site before work begins. Although the emergency procedures at each job site may vary somewhat, the basic procedures are as follows:

- Don't panic.
- If needed, call for help / 911.
- Provide the dispatcher with detailed information.
- In case of a trench cave in or confined space accident, do not attempt to rescue unless trained in rescue procedures.
- Provide first aid if qualified to do so.
- Don't move injured person unless his or her life is in danger from sources other than the injury.
- Secure the site.
- Shut down the equipment, if necessary.
- Account for everybody on the site.
- Notify the Safety Officer of emergency within 1 (one) hour.

Fire

In the event of a fire the procedures are:

- Use fire extinguisher to put out small fires.
- Evacuate the work area.
- Call fire department / 911.
- Meet at designated location.
- Notify the Safety Officer of the fire within 1 (one) hour.

First Aid

First aid for minor injuries can be administered on the job site. If the injury requires immediate medical treatment beyond first aid, Supervisors will call the appropriate emergency number to receive immediate medical treatment.

If the injury does not require immediate medical treatment, but does require medical treatment beyond first aid, the Supervisors shall arrange transportation for the employee to the appropriate emergency medical facility.

If the injury is minor, and first aid treatment is required by the Supervisors, appropriate action should be taken to prevent exposure to blood borne pathogens and the exchange of body fluids.

All employees must notify their supervisor and/or the Safety Officer of any first aid uses or occurrences.

Accident Reporting and Record Keeping

- All accidents must be reported to the Safety Officer or the main office within 1 hour.
- All eye, neck, back and knee accidents / injuries require immediate medical attention, no matter how minor.
- Accident reports must be 100% complete and turned in to Safety Officer within 24 hours of accident.
- All accidents require:
 - a) OSHA 301 Form and Company Accident Form
 - b) First Report of Accident Form (per specific state insurance requirements)
 - c) Substance Abuse Results Form (if applicable)

The company will maintain an OSHA 300 form (log and summary or equivalent) of all recordable injuries and illnesses resulting in a fatality, hospitalization, lost workdays, medical treatment, and/or loss of consciousness.

The previous year OSHA 300 A summary shall be posted by February 1 of each year.

The OSHA 300, (log and summary), the OSHA 301, (supplementary record or company accident report), shall be retained for five years following the end of the year to which it relates.

Within 8 hours after its occurrence, an employment accident which is fatal to one (1) or more employees shall be reported either orally or in writing, to the nearest OSHA Area Coordinator. Also, within 24 hours after its occurrence, any employment accidents which result in inpatient hospitalization, amputation, or loss of an eye to one (1) or more employees shall be reported either orally or in writing, to the nearest OSHA Area Coordinator. 1-800-321-OSHA (1-800-321-6742)

Modified - Work Program

In the interest of eliminating lost time injuries and reducing Workers Compensation Insurance costs, Miller Mechanical may use a "Modified - Work Program" for injured employees. The intent of this program is to have injured workers with physical restrictions continue to work performing a modified work task within their physical limitations. It is not to be construed as a "make work" program.

Subcontractor Selection

Safety and health performance will be one of the criteria used to select subcontractors. The safety and health guidelines outlined below will be used to evaluate subcontractors.

- a) Insurance Certificate
- b) Safety and Health Manual
- c) Substance Abuse Program

Safety and Health Manual Revision

The Safety and Health Manual is a working document and will be revised and updated as necessary. At a minimum, the Safety and Health Manual will be reviewed and updated on an annual basis.

Safety Bulletin Board

A "Safety Bulletin Board" will be established with up-to-date and current safety information. Many other safety related items will be available in the "Safety Bulletin Board" area.

Distribution of the Safety and Health Manual

Up-to-date copies of the Safety and Health Manual will be available to all employees, subcontractors and vendors through the Safety Officer. In addition, Project Managers and Supervisors will have up-to-date copies of the Safety and Health Manual.

Glossary of Common Terms

A

Absolute

A chemical substance that is not mixed or is pure. An example is Absolute Alcohol which is ethyl alcohol containing not more than 1% water.

Acute Effect

An adverse effect on a human or animal body with severe symptoms developing rapidly and coming quickly to a crisis. Also see "*chronic effect*".

Acute Toxicity

The adverse effects resulting from a single dose of or exposure to a substance.

B

Boiling Point

The temperature at which a liquid changes to a vapor. Usually expressed in degrees Fahrenheit. Boiling points of some common liquids.

| | |
|---------------|-------|
| Water..... | 212 F |
| Gasoline..... | 100 F |
| Propane..... | -44 F |
| Butane..... | 31 F |

C

Ceiling Limit

The maximum allowable exposure limit for an airborne substance that people may be exposed to, but which may not be exceeded even momentarily.

CAA

Clean Air Act; Federal regulation enacted to regulate and reduce air pollution.

Carcinogen

A substance capable of causing or producing cancer in people or animals.

Chronic Effect

An adverse effect on a human or animal with symptoms which develop slowly over a long period of time or which recur frequently. See also "*acute effect*".

Chronic Toxicity

Adverse effects resulting from repeated doses of or exposure to a substance over a relatively prolonged period of time.

Combustible

Defines materials that burn at a set temperature. Solids such as wood and paper are commonly referred to as ordinary combustibles. Liquid combustibles are liquids that have flash point (maybe thought of as an ignition temperature) of 100 F or higher.

D

Decomposition

Breakdown of material or substance into parts or elements.

Dermal

Used on or applied to the skin.

Dermal Toxicity

Adverse effects resulting from skin exposure to a substance.

E

EPA

U.S. Environmental Protection Agency; Federal Agency with environmental protection regulatory and enforcement authority.

F

Flammable Liquids

Liquids that produce vapors that may ignite at a known temperature (flashpoint). Flammable liquids are divided into three classes; I, II, III. Class I liquids are most flammable. Class III liquids are the least.

G

Gram

Measure of mass or weight.

H

Hazardous Material

Any substance or mixture of substance that have the capability of having an adverse effect on the health or safety of a human.

I

Ignitable

Capable of being set on fire.

Incompatible

Materials which could cause dangerous reactions from direct contact with one another.

Ingestion

Consuming something by mouth.

Inhalation

Breathing in of a substance such as a gas, vapor, dust, or mist.

K

L

LD

Lethal dose – the amount of a substance which will kill an animal or human.

LEL

Lower explosive limit – the minimum amount of a substance in air that can be ignited.

M

Melting Point

The temperature at which a solid substance changes to a liquid.

N

NFPA

National Fire Protection Association – An international voluntary organization to promote and improve fire protection and prevention. NFPA recommended practices have been adopted as fire codes in many communities.

NIOSH

National Institute for Occupational Safety and Health – Federal agency that researches workplace environments that may cause injury or adverse health effects. Recommends standards to OSHA.

O

OSHA

Occupational Safety and Health Administration – part of the U.S. Department of Labor, it is responsible for developing and enforcing workplace safety standards.

Oxidation

Chemical reaction in which a substance combines with oxygen. Rusting material is a form of oxidation.

Oxidizer

Chemical or chemical compound which rapidly releases oxygen under a variety of conditions.

P

PEL

Permissible exposure limit: an exposure limit established by OSHA. It is the amount of a material that a human may be exposed to during a normal work day.

PPM

Parts per million – a unit of measurement.

R

Reaction

A chemical change or transformation.

Reactivity

The tendency of a substance to undergo a chemical reaction with the release of energy in the form of heat.

S

Sensitizer

A substance which on a first exposure has little to no affect or reaction in people, but over time with repeated exposure produces a reaction such as an allergy.

T

Toxicity

The amount of a material which causes an adverse reaction in people.

U

Unstable

Material that could easily change into another material or which may easily decompose in an often violent manner.

V

Vapor

Liquid that is changing to a gas producing a mixture in air.

Vapor Density

The weight of a set volume of a chemical vapor compared to an equal volume of air.

W

X

Y

Z

PART 2

JOB SITE SPECIFIC SAFETY RULES

Part 2 Jobsite Specific Safety Rules is a section of specific safety rules and regulations (OSHA 1926) for the construction job site. Please refer to Part 4 Specific Safety and Health Policies, Programs and Plans for additional safety policies and in-depth, detailed procedures on certain safety issues and work task.

Abrasive Grinding

Abrasive wheel bench or stand grinders must have safety guards strong enough to withstand bursting wheels. [1926.303(b) & (c)(1)]

Adjust work rest on grinders to a clearance not to exceed 1/8 inch between rest and wheel surface. [1926.303(c)(2)]

Inspect abrasive wheels before mounting. [1926.303(c)(7)]

Always leave wheel in safe working condition for next user.

Access / Egress

Do not jump on or off equipment and/or vehicles.

Use only safe means of access / egress to and from work areas. Safe means includes ladders, ramps and stairs. Jumping from or to work areas is not allowed, nor is sliding down cables, ropes or guy-wires.

Keep all equipment, vehicles, footwear, access areas, etc., clean at all times.

Aerial Lifts

All modifications to any aerial lift, must have written approval from the manufacturer. [1926.453(a)(2)]

Employees shall have adequate training and proper authorization prior to operating any Aerial Lift. [1926.453(b)(2)(ii)]

Employees shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position. [1926.453(b)(2)(iv)]

A body belt shall be worn and a lanyard attached to the boom or basket when working from an aerial lift. [1926.453(b)(2)(v)]

Never remove the guardrail while the aerial lift is in use. Always use the safety chain while the aerial lift is in use.

Never disconnect the back up alarm on an aerial lift.

Never dismount the aerial lift until it is all the way down.

Always alert other employees on the aerial lift prior to changing the height or the position of the aerial lift.

Use extreme caution when using the aerial lift on uneven surfaces.

Use extreme caution to avoid head injuries from overhead objects when lifting aerial lift.

Air Tools

Secure pneumatic tools to hose in a positive manner to prevent accidental disconnection. [1926.302(b)(1)]

Install and maintain safety clips or retainers on pneumatic impact tools to prevent attachments from being accidentally expelled. [1926.302(b)(2)]

The manufacturer's safe operating pressure for all fittings shall not be exceeded. [1926.302(b)(5)]

Clothing

All clothing shall be maintained in good shape and worn correctly.

No clothing shall be worn at work that has excessive holes.

No clothing shall be excessively loose, no “hanging” clothes, no “baggy” pants, etc.

Compressed Air, use of

Compressed air used for cleaning purposes may not exceed 30 psi, and then only in conjunction with effective chip guarding and personal protective equipment. [1926.302(b)(4)]

The use of compressed air to clean off yourself or other workers is not allowed.

Compressed Gas Cylinders

Put valve protection caps in place before compressed gas cylinders are transported, moved or stored. [1926.350(a)(1)]

Compressed gas cylinders shall be secured by a cart, chain, etc. at all times. [1926.350(a)(7)]

Cylinder valves will be closed when work is finished and when cylinders are empty or being moved. [1926.350(a)(8)]

Compressed gas cylinders shall be secured in an upright position at all times except, if necessary, for short periods of time while cylinders are actually being hoisted or carried. [1926.350(a)(9)]

Oxygen and fuel gas cylinders (in storage), shall be separated by a five - foot high non - combustible wall. The wall must have a fire resistance rating of at least one - half hour or a 20-foot separation. [1926.350(a)(10)]

No damaged or defective cylinders shall be used. [1926.350(c)(3)]

Oxygen and fuel gas regulators must be in proper working order while in use. [1926.350(h)]

Concrete and Masonry Construction

No construction loads shall be placed on the structure until the structure is capable of supporting the load. [1926.701(a)]

All protruding reinforced steel onto and into which employees could fall, shall be guarded to eliminate the hazard of impalement. [1926.701(b)]

No employee shall work under concrete bucket while the bucket is being elevated or lowered into position. [1926.701(e)(1)]

Only authorized employees shall be allowed in the “limited access zone” of masonry walls construction. [1926.706(a)(1) thru (a)(5)]

All employees required to enter into areas of concrete and masonry construction shall have received the appropriate training to be able to recognize any and all hazards they may be exposed to and to protect themselves from such hazards.

Confined Spaces

All employees required to enter into confined or enclosed spaces must be instructed as to the nature of the hazards involved, the necessary precautions to be taken, and in the use of required protective and emergency equipment. The employer shall comply with any specific regulations that apply to work in dangerous or potentially dangerous areas. Confined or enclosed spaces include, but are not limited to, storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, tunnels, pipelines and open top spaces more than 4 feet deep, such as pits, tubs, vaults, and vessels. [1926.21(b)(6)(i) and (ii)]

Job site Superintendents are responsible for the successful implementation and maintenance of this program at all job sites for which he / she is responsible.

No employee of this company may enter any confined space without proper training to perform a confined space entry or without an unauthorized permit signed by the project superintendent or site foreman.

Cranes

The controlling entity must: ensure that ground preparations necessary to meet the requirements in paragraph (b) of this section are provided. [1926.1402(c)(1)]

Assembly / Disassembly must be supervised by a person who meets the criteria for both a competent person and a qualified person, or by a competent person who is assisted by one or more qualified persons ("A / D director"). [1926.1404(a)(1)]

Upon completion of assembly, the equipment must be inspected by a qualified person to assure that it is configured in accordance with manufacturer equipment criteria. [1926.1412(c)(1)]

A competent person must begin a visual inspection prior to each shift the equipment will be used, which must be completed before or during that shift. The inspection must consist of observation for apparent deficiencies. Taking apart equipment components and booming down is not required as part of this inspection unless the results of the visual inspection or trial operation indicate that further investigation necessitating taking apart equipment components or booming down is needed. Determinations made in conducting the inspection must be reassessed in light of observations made during operation. [1926.1412(d)(1)]

A competent person must begin a visual inspection prior to each shift the equipment is used, which must be completed before or during that shift. The inspection must consist of observation of wire ropes (running and standing) that are likely to be in use during the shift for apparent deficiencies, including those listed in paragraph (a)(2) of this section. Untwisting (opening) of wire rope or booming down is not required as part of this inspection. [1926.1413(a)(1)]

The employer must comply with all manufacturer procedures applicable to the operational functions of equipment, including its use with attachments. [1926.1417(a)]

Whenever there is a concern as to safety, the Operator must have the authority to stop and refuse to handle loads until a qualified person has determined that safety has been assured. [1926.1418]

Personal fall arrest system components must be used in personal fall arrest and fall restraint systems and must conform to the criteria in 1926.502(d) except that 1926.502(d)(15) does not apply to components used in personal fall arrest and fall restraint systems. Either body belts or body harnesses must be used in personal fall arrest and fall restraint systems. [1926.1423(d)]

Train each employee assigned to work on or near the equipment ("Authorized Personnel") in how to recognize struck-by and pinch / crush hazard areas posed by the rotating superstructure. [1926.1424(a)(2)(i)]

The use of equipment to hoist employees is prohibited except where the employer demonstrates that the erection, use, and dismantling of conventional means of reaching the work area, such as a personnel hoist, ladder, stairway, aerial lift, elevating work platform, or scaffold, would be more hazardous, or is not possible because of the project's structural design or worksite conditions. This paragraph does not apply to work covered by subpart R (Steel Erection) of this part. [1926.1431(a)]

Employers must ensure that the operators of cranes have qualification or certification prior to use.

At / near any Power lines, before the beginning of any equipment operation, the employer must identify the work zone and assess the hazards.

Power line safety for equipment operations including assembly and disassembly must be adhered to.

All safety devices and operational aids required shall be installed and operational.

The employer of the signal person must ensure that each signal person meets the Qualification Requirements.

Demolition

All electric, gas, water, steam, sewer, and other service lines shall be shut off, capped, or otherwise controlled, outside the building line before demolition work is started. In each case, any utility company, which is involved, shall be notified in advance. [1926.850(c)]

It shall also be determined if any type of hazardous chemicals, gases, explosives, flammable materials, or similarly dangerous substances have been used in any pipes, tanks, or other equipment on the property. When the presence of any such substances is apparent or suspected, testing and purging shall be performed and the hazard eliminated before demolition is started. [1926.850(e)]

No workers shall be permitted in any area, which can be adversely affected by demolition operations, when balling or clamming is being performed. Only those workers necessary for the performance of the operations shall be permitted in this area at any other time. [1926.859(a)]

During demolition, continuing inspections by a competent person shall be made as the work progresses to detect hazards resulting from weakened or deteriorated floors, or walls, or loosened material. No employee shall be permitted to work where such hazards exist until they are corrected by shoring, bracing, or other effective means. [1926.859(g)]

Drinking Water

An adequate supply of potable water shall be provided in all places of employment. [1926.51(a)(1)]

Potable water containers shall be capable of being tightly closed and be equipped with a tap. [1926.51(a)(2)]

The common drinking cup is prohibited. Cup dispensers and disposable cups shall be provided. [1926.51(a)(4)]

A sanitary container for unused cups and a receptacle for used cups shall be provided. [1926.51(a)(5)]

Electrical - General

These sections apply to installations, both temporary and permanent, used on the job site. [1926.402(a)]

All electrical conductors and equipment shall be approved. [1926.403(a)]

The employers shall ensure that electrical equipment is free from recognized hazards that are likely to cause death or serious harm to employees. [1926.403(b)]

Splices must be soldered wire connections with insulation equal to the cable. [1926.403(e)]

All 120-volt, single phase, 15- and 20- ampere receptacles must be protected by G.F.C.I. [1926.404(b)(1)(ii)]

Temporary lights shall not be suspended by their cords. [1926.405(a)(2)(ii)(F)]

Flexible cords and cables shall be protected from damage. [1926.405(a)(2)(ii)(I)]

All extension cords must be 3 - wire type, protected from damage, and not fastened with staples, hung from nails or suspended from wires. [1926.405(a)(2)(ii)(J)] & [1926.416(e)(2)]

No employee may work in proximity to any electric power circuit that may be contacted during the course of work, unless protected against electric shock by de-energizing circuit and grounding it or by guarding with effective insulation. [1926.416(a)(1)]

Worn or frayed electrical cords or cables shall not be used. [1926.416(e)(1)]

Cables passing through work areas will be covered or elevated to protect from damage. Boxes with covers for the purpose of disconnecting must be securely and rigidly fastened to mounting surface.

All extension cords shall be inspected daily, prior to use, for damage or defects.

No cord or tool with a damaged ground plug shall be used.

Only qualified electricians are allowed to make electrical repairs on equipment, tools, etc.

Employee / Subcontractor Conduct

No "catcalling" and/or any form of sexual harassment will be tolerated.

Any employee caught stealing anything, will be terminated.

All employees of this company and all subcontractor employees are required to follow all of our client's safety rules and regulations.

All employees of this company and all subcontractor employees shall follow all federal, state and local laws and regulations at all times on company projects, company property and/or during company business hours.

Excavation and Trenching

No employee of this company is allowed to commence work in or on an excavation without a competent person on site.

The estimated location of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations, that reasonably may be expected to be encountered during excavation work, shall be determined prior to opening an excavation. [1926.651(b)(1)]

When excavation operations approach the estimated location of underground installations, the exact location of the installations shall be determined by safe and acceptable means. While the excavation is open, underground installation shall be protected, supported or removed as necessary to safeguard employees. [1926.651(b)(3)&(b)(4)]

Each employee in an excavation shall be protected from cave-ins by an adequate protective system except when:

- Excavations are made entirely in stable rock; or excavations are less than five feet in depth and examination of the ground by a competent person provided no indication of a potential cave-in. [1926.652(a)(1)(i) & (a)(1)(ii)]

Protective systems shall have the capacity to resist without failure all loads that are intended or could reasonably be expected to be applied and/or transmitted to the system. [1926.652(a)(2)]

A copy of the tabulated data for excavation protective systems must be maintained at the job site during construction. [1926.652(c)(3)(iii)]

Employees shall be protected from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or equipment at least two feet from the edge of the excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary. [1926.651(j)(2)]

Daily inspections of excavations, the adjacent areas and protective systems shall be made by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by a competent person prior to the start of work and as needed throughout the shift. Inspections shall also be made after every rainstorm or other hazard-increasing occurrence. These inspections are only required when employee exposure is anticipated. [1926.651(k)(1)]

Where a competent person finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed employees shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety. [1926.651(k)(2)]

A stairway, ladder, ramp or other safe means of egress shall be located in trench excavations that are four feet or more in depth so as to require no more than 25-feet of lateral travel for employees. [1926.651(c)(2)]

Where employees or equipment are required or permitted to cross over excavations, walkways or bridges with standard guardrails shall be provided. [1926.651(l)] & [1926.501(b)(7)]

The Competent Person must ensure that all necessary safety equipment and PPE, including rescue equipment, is on-site prior to entrance into an excavation.

No employee of this company is allowed to work in excavations alone. A spotter is required to help protect the employee and / or call for help in the event of a cave-in.

Excavations over 20'-0" must be engineered by an registered engineer prior to excavation.

Explosives and Blasting

No employee of this company is allowed to enter into explosives and blasting areas.

Eye and Face Protection

Eye and face protection must be worn when machines or operations present potential eye or face injury. [1926.102(a)(1)]

Eye and face protective equipment shall meet all requirements of ANSI Z 87.1-1968, "Practice of Occupational and Educational Eye and Face Protection". [1926.102(a)(2)]

Goggles will be worn over any employee owned prescription glasses that do not meet industrial safety standards. [1926.102(a)(3)]

Employees involved in welding operations must wear filter lenses or plates of the proper shade number. [1926.102(b)(1)]

Employees exposed to laser beams shall be furnished suitable laser safety goggles, which will protect for the specific wavelength of the laser and be optical density (O.D.) adequate for the energy involved. [1926.102(b)(2)]

Eye protection, in the form of safety glasses, shall be worn at all times while employees are on the jobsite.

Fall Protection

Where employees are exposed to falling 6 feet or more from an unprotected side or edge, the employer must select and use a guardrail system, safety net system, or a personal fall arrest system to protect the worker from falls. [1926.501(b)(1)]

A personal fall arrest system consists of an anchorage, connectors, a body harness and may include a lanyard, a deceleration device, lifeline or a suitable combination of these. [1926.500 (b)] & [1926.502(d)]

Each employee in a hoist area shall be protected from falling 6 feet or more by guardrail systems or personal fall arrest systems. If guardrail systems (or chain gate or guardrail) or portions thereof must be removed to facilitate hoisting operations, as during the landing of materials, and a worker must lean through the access opening or out over the edge of the access opening to receive or guide equipment and materials, that employee must be protected by a personal fall arrest system. [1926.501(b)(3)]

Personal fall arrest systems, covers, or guardrail systems must be erected around holes (including skylights) that are more than 6 feet above lower levels. [1926.501(b)(4)]

Each employee using ramps, runways, and other walkways shall be protected from falling 6 feet or more by guardrail systems. [1926.501(b)(6)]

Each employee at the edge of an excavation 6 feet deep or more shall be protected from falling by guardrail systems, fences, barricades, or covers. Where walkways are provided to permit employees to cross over excavations, guardrails are required on the walkway if it is 6 feet or more above the excavation. [1926.501(b)(7)]

Fire Protection

A fire protection program is to be followed throughout phases of the construction and demolition work involved. It shall provide for effective fire fighting equipment to be available without delay, and designed to effectively meet all fire hazards as they occur. [1926.150(a)(1)]

Fire fighting equipment shall be conspicuously located and readily accessible at all times, and periodically inspected and maintained in operating condition. [1926.150(a)(2) through (a)(4)] Report any inoperative or missing equipment to your supervisor.

First Aid

The employer shall insure the availability of medical personnel for advice and consultation on matters of occupational health. [1926.50(a)]

Provisions shall be made prior to commencement of the project for prompt medical attention in case of serious injury. [1926.50(b)]

In the absence of an infirmary, clinic, hospital, or physician, that is reasonably accessible in terms of time and distance to the worksite, which is available for the treatment of injured employees, a person who has a valid certificate in first-aid training from the U.S. Bureau of Mines, the American Red Cross, or equivalent training that can be verified by documentary evidence, shall be available at the worksite to render first aid. [1926.50(c)]

First aid supplies shall be easily accessible when required. [1926.50(d)(1)]

The contents of the first aid kit shall be placed in a weatherproof container with individual sealed packages for each type of item, and shall be checked by the employer before being sent out on each job and at least weekly on each job to ensure that the expended items are replaced. [1926.50(d)(2)]

Proper equipment for prompt transportation of the injured person to a physician or hospital, or a communication system for contacting necessary ambulance service, shall be provided. [1926.50(e)]

In areas where 911 is not available, the telephone numbers of the physicians, hospitals, or ambulances shall be conspicuously posted. [1926.50(f)]

Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use. [1926.50(g)]

Flag Personnel

When signs, signals, and barricades do not provide necessary protection on or adjacent to a highway or street, flag personnel or other appropriate traffic controls shall be provided. [1926.200] & [1926.201]

Flag personnel shall wear highly visible garments while flagging. Warning garments worn at night will have reflector material. [1926.200] & [1926.201] & [1926.651(d)]

Always follow state D.O.T. requirements and MUTCD Manual.

Flammable and Combustible Liquids

No more than 25 gallons shall be stored in a room outside of an approved storage cabinet. [1926.152(b)(1)]

Only approved containers and portable tanks shall be used for storage and handling of flammable and combustible liquids. [1926.152(a)(1)] & [1926.155(L)]

Post conspicuous and legible signs prohibiting smoking in service and refueling areas. [1926.152(g)(9)]

All containers must be labeled with appropriate hazardous warnings. Keep flammable liquids in closed containers.

No smoking within 25' of any fuel storage and/or fueling operations.

Foot Protection

Employees shall wear work shoes or work boots that give ankle support and have a hard sole on the job site.

No sneakers, tennis shoes or open toed shoes are permitted on the job site.

Additional toe protection shall be used when required.

Forklift Safety

The employer shall certify that each operator has been trained and evaluated as required by 1910.178(L)(6). [1926.602(d)]

Employees shall have adequate training and proper authorization prior to operation

Forklift extensions should always be close to the ground when driving forklift un-loaded.

When forklift is being used to move material, be cautious of overhead objects such as lights, power lines, etc.

Never speed or turn too quickly. When forklift is not in use the brake should be set and the machine in park.

Always use caution and watch out for people around corners. Always blow the horn when going through a doorway or around a corner.

Only one person is allowed on forklift at a time.

Gases, Vapors, Fumes, Dusts, and Mists

Exposure to toxic gases, vapors, fumes, dusts, and mists at a concentration above those specified in the "Threshold Limit Values of Airborne Contaminants for 1970" of the ACGIH, shall be avoided. (American Conference of Government Industrial Hygienists) [1926.55(a)]

When engineering and administrative controls are not feasible to achieve full compliance, protective equipment or other protective measures shall be used to keep the exposure of employees to air contaminants within the limits prescribed. Any equipment and technical measures used for this purpose must first be approved for each particular use by a competent industrial hygienist or other technically qualified person. [1926.55(b)]

Hand Protection

Employees should be aware of hand hazards such as pinch points, sharp objects, hot objects, etc. and wear appropriate gloves to protect hands and lower arms.

Hand Tools

Employers shall not issue or permit the use of unsafe hand tools. [1926.301(a)]

Wrenches shall not be used when jaws are sprung to the point slippage occurs. Keep impact tools free of mushroomed heads. Keep wooden tool handles free of splinters or cracks and assure a tight connection between the tool head and the handle. [1926.301(b), (c) & (d)]

Electric - power operated tools shall either be approved double insulated or be properly grounded, and used with ground fault circuit interrupters. [1926.302(a) & 1926.404(b)(1)]

Hard Hats

Employees working in areas where there is a possible danger of head injury from impact, or from falling or flying objects, or from electrical shock or burns, shall be protected by protective helmets. [1926.100]

Hard hats shall be worn at all times on the job site and shall be worn correctly.

Hard hats shall be worn at all times when off equipment and/or out of vehicles.

Hearing Protection

When engineering or administrative controls fail to reduce sound levels within the limits of Table D-2, ear protective devices shall be provided and used. [1926.52(b) & 1926.101(a)]

In all cases where sound levels exceed the values shown in Table D-2 of the Safety and Health Standards, a continuing, effective hearing conservation program shall be administered. [1926.52(d)(1)]

Table D-2 Permissible Noise Exposures

| Duration Per Day, Hours | Sound Level DBA Slow Response |
|-------------------------|----------------------------------|
| 8 | 90 |
| 6 | 92 |
| 4 | 95 |
| 3 | 97 |
| 2 | 100 |
| 1 ½ | 102 |
| 1 | 105 |
| ½ | 110 |
| ¼ or less | 115 |

Plain cotton is not an acceptable protective device. [1926.101(c)]

Heating Devices, Temporary

When heating devices are used, fresh air shall be supplied to maintain the safety and health of employees. [1926.154(a)(1)]

Heat Stress

Employees are encouraged to drink plenty of water during work days.

During work in hot environments, workers should use the lightest weight or “breathable” protective garments that give adequate protection.

Heavy and minimal work activities should be alternated.

Housekeeping / Clean-up

Clean up everyday all areas, including but not limited to, job site, vehicles, shop, office, equipment, tools, etc.

Scrap lumber and other debris will be kept clear from work areas at all times. [1926.25(a)]

Remove combustible scrap and debris at regular intervals. [1926.25(b)]

Containers will be provided for collection and separation of all refuse. Covers are required on containers used for flammable or harmful substances. [1926.25(c)]

Nails shall be withdrawn from used lumber. [1926.250(b)(8)(i)]

Whenever materials and/or trash are dropped more than 20 feet, an enclosed chute shall be used. [1926.252(a)]

At the end of each phase of work, return all tools and excess material to proper storage. Clean up all debris before moving on to the next phase. Each employee is responsible for keeping their work areas clean.

All vehicles and/or equipment must be free of loose debris, dirt, mud, etc., before operation on public roads.

Ladders

Job-made ladders will be constructed for their intended use and/or load. Rungs and/or cleats will be uniformly spaced, no more than 12 inches, apart. [1926.1053(a)(3)(i) & (a)(3)(ii)]

Place portable ladders on a substantial base at a 4-1 pitch, have clear access at top and bottom, extend a minimum of 36 inches above landing or, where not practical, provide grab rails. Secure against movement while in use. [1926.1053(b)(1) thru (b)(7)]

Portable metal ladders may not be used for electrical work or where they may contact electrical conductors. [1926.1053(b)(12)]

Portable and fixed ladders with broken or missing rungs or steps, broken or split side rails, or with other faulty or defective construction are prohibited. When ladders with such defects are discovered, withdraw them from service immediately. [1926.1053(b)(16)]

All employees working in a trench, four feet or more in depth, must be within 25 feet of a ladder, ramp, or stairs. [1926.651(c)(2)]

Under no circumstances will an employee use anything other than a ladder, scaffold or ramp to enter and exit excavations over four feet in depth. These methods will also be wholly within a protective system if the excavation is over five feet in depth. If a ramp is used, the slope shall be flat enough for employees to enter and exit in an upright position.

No ladders shall be used in a horizontal position as platforms, runways, or scaffolds. Extension ladders must be retracted before transporting.

All ladders must be secure. Always face ladders when going up or down.

Materials and tools should be hoisted up or down ladders with a rope, cable or other safe hoisting methods.

Never use the top or the top step of a stepladder.

A ladder inspection program should be utilized to ensure all ladders are inspected at least 4 times per year by a competent person. This inspection is a visual inspection to ensure the ladder is in proper working condition.

Lasers

Only qualified and trained employees shall be assigned to install, adjust and operate laser equipment. [1926.54(a)]

“Laser in Use” signs shall be posted at all times lasers are in operation. [1926.54(d)]

Lighting

Construction area, ramps, walkways, corridors, offices, shops, sheds and storage areas shall be adequately lighted. [1926.56(a) & (b)]

Additional lighting and maintenance of lighting shall be provided as necessary, including but not limited to stairways, aisle ways, and entry / exit areas.

Liquefied Petroleum Gas

Each system shall have containers, valves, connectors, manifold valve assemblies, and regulators of an approved type. [1926.153(a)(1)]

All cylinders shall meet DOT specifications. [1926.153(a)(2)]

Every container and vaporizer shall be provided with one or more approved safety relief valves or devices. [1926.153(d)(1)]

Containers shall be placed upright on firm foundations or otherwise firmly secured. [1926.153(g) & (h)(11)]

Portable heaters shall be equipped with an approved automatic device to shut off the flow of gas in the event of flame failure. [1926.153(h)(8)]

Storage of LPG within buildings is prohibited. [1926.153(j)]

Storage locations shall have at least one approved portable fire extinguisher, rated not less than 20-b:c. [1926.153(L)]

Lock Out / Tag Out

Controls that are to be deactivated during the course of work on energized or de-energized equipment or circuits shall be tagged. [1926.417(a)]

Equipment or circuits that are de-energized shall be rendered inoperative and shall have tags attached at all points where such equipment or circuits can be energized. [1926.417(b)]

Tags shall be placed to identify plainly the equipment or circuits being worked on. [1926.417(c)]

Manual Lifting

Employees should be prepared for lifting task assigned and use legs to lift, instead of back or obtain assistance.

Recommended lifting procedures include:

- Stand close to the load;
- Firmly grasp the object to be lifted;
- While holding load close to the body, bend knees and lift with legs;
- Keep back as straight as possible;
- Do not twist torso while carrying the load and place the load using the same technique;
- Use any required PPE

Motor Vehicles and Construction Equipment

Check all vehicles in use at the beginning of each workday to assure all parts, equipment and accessories affecting safe operation are in proper operating condition and free from defects. All defects shall be corrected before placing vehicle in service. [1926.601(b)(14)]

No employee shall use any motor vehicle, earthmoving, or compacting equipment having an obstructed view to the rear unless:

- Vehicle has a reverse signal alarm distinguishable from the surrounding noise level,
or
- Vehicle is backed up only when an observer signals it is safe to do so. [1926.601(b)(4)]

Willful destruction of company property (such as cutting back-up alarm wires or seatbelts) shall result in immediate dismissal.

Heavy machinery, equipment, or parts thereof, which are suspended or held aloft will be substantially blocked to prevent falling or shifting work under or between them. [1926.600(a)(3)(i)]

Employees shall maintain eye contact with operators of all types of vehicles or equipment. Before entering the site, locate all moving equipment and/or potential sources and routes of moving equipment. This shall be determined and precautions taken at that time to ensure employees on the ground do not come into physical contact with moving equipment. Ensure that all back-up alarms are functioning and/or spotters and/or mirrors are in place and in use.

Personal Protective Equipment

The employer is responsible for requiring the wearing of appropriate personal protective equipment in all operations where there is an exposure to hazardous conditions, or where the need is indicated for using such equipment to reduce the hazards to the employees. [1926.28(a)]

Where employees provide their own protective equipment, the employer shall be responsible to assure its adequacy, including proper maintenance, and sanitation of such equipment. [1926.95(b)]

Employees working over or near water, where the danger of drowning exists, shall be provided with U.S. Coast Guard-approved life jackets or buoyant work vests. [1926.106(a)]

All employees are required to wear the appropriate personal protective equipment when required, by any and all rules and regulations set forth by our clients and/or any federal, state or local rules and regulations.

For clarity, "when required" includes, but is not limited to:

- when required by OSHA
- when required by work task
- when required by posted signage
- when required by client

Powder - Actuated Tools

Only trained employees shall operate powder – actuated tools. [1926.302(e)(1)]

Power Tools

Electric power operated tools shall be of the approved double-insulated type or grounded in accordance with subpart K of this part. [1926.302(a)(1)]

Proper power tools shall be identified as associated with tasks to be performed.

Power tools must be unplugged (Or de-energized) when not in specific use.

Power tools must be used only for the intended purpose.

Power tools should be inspected at least 4 times per year to ensure they are being used in proper working condition; the inspection should include both a visual inspection and continuity test.

Power Transmission, Mechanical

Belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains or other reciprocating, rotating, or moving parts of equipment must be guarded if such parts are exposed to contact by employees or otherwise constitute a hazard. No equipment may be used without guards in place. [1926.300(b)(2)]

Protection of the Public

All company personnel are charged with aiding in the protection of the public including, as your job description dictates, installation and maintenance of signs, signals, lights, fences, guardrails, ramps, temporary sidewalks, barricades, overhead protection, etc. as may be necessary.

Always give the public the “right of way”.

Respiratory Protection

In emergencies, when engineering or administrative controls are not effective in maintaining acceptable atmospheres, appropriate respiratory protective equipment shall be provided by the employer and shall be used. [1926.103] & [1910.134]

Respiratory protective devices, shall be approved by the National Institute for Occupational Safety and Health or acceptable to the U.S. Department of Labor for the specific contaminant to which the employee is exposed. [1926.103] & [1910.134]

Respiratory protective devices shall be appropriate for the hazardous material involved and the extent and nature of the work requirements and conditions. [1926.103] & [1910.134]

Employees required to use respiratory protective devices, shall be thoroughly trained in their use. [1926.103] & [1910.134]

Respiratory protective equipment shall be inspected regularly and maintained in good condition. [1926.103] & [1910.134]

Rules for Drivers of Vehicles

No employee shall operate vehicles without adequate training and proper authorization.

Drivers must not take chances. To arrive safely is more important than to arrive on time.

At all times be cautious of other drivers on the road.

Display a positive company image while driving any vehicle.

Positively no tailgating. Maintain a proper distance between you and all other drivers.

Obey all speed limits and observe extreme caution in school zones.

Each employee who drives a vehicle must have a valid driver's license for that type of vehicle. Prior to being hired to operate that vehicle, your license will be checked by the management of the Company. It is the employee's responsibility to maintain a valid license thereafter.

Drivers should also refer to Part 2, in the section titled "Motor Vehicles and Construction Equipment."

When pulling a trailer, compressor, tack wagon, or other unit, always hook up safety chains and put a pin through the hitch.

Anyone pulling a trailer or piece of equipment is responsible for checking for proper tags, tires, lights, signals, mirrors, fuel, etc.

All accidents must be reported to the office within 1 hour.

If an accident occurs, the driver must follow the procedures as outlined in the Substance Abuse Program.

No unauthorized "Riders" in vehicles.

Rules for Operators

No employee shall operate equipment without adequate training & proper authorization.

Operators shall not operate any equipment that is not in safe working order.

Operators shall inspect their equipment prior to beginning work to ensure the equipment is in safe condition.

Operators will also refer to Part 2, in the section titled "Motor Vehicles and Construction Equipment".

All accidents must be reported to the office within 1 hour.

If an accident occurs, the operator must follow the procedures as outlined in the Substance Abuse Program.

No "Riders" on equipment.

No employee shall ride any piece of equipment in any fashion or ride on anything attached to a piece of equipment such as a pipe or other equipment. If an employee is on or in a piece of motorized movable equipment, it shall be equipped with a seat (if intended for sit-down operation) and a seat belt and the seat belt shall be worn snugly.

All forklift operators require specific training prior to operating the equipment.

Saws

Portable, power-driven circular saws will be equipped with guards above and below the base plate or shoe. The lower guard will cover the saw to depth of teeth, except for minimum arc required to allow proper retraction and contact with the work, and will automatically return to covering position when blade is removed from the work. [1926.304(d)]

Radial saws will have an upper guard, which completely encloses upper half of saw blade. The sides of the lower exposed portion of blade will be guarded by a device that will automatically adjust to the thickness of and remain in contact with material being cut. Radial saws will be installed so the cutting head will return to starting position when released by operator. [1926.304(g)]

All swing or cut-off saws will be provided with a hood that will completely enclose the upper half of the saw.

All portions of band saw blades will be enclosed or guarded, except for working portion of blades between bottom of guide rolls and table.

Scaffolds

Scaffold means any temporary elevated platform (supported or suspended) and its supporting structure (including points of anchorage) used for supporting employees or materials or both. [1926.450(b)]

Each scaffold and scaffold component shall support, without failure, its own weight and at least 4 times the maximum intended load applied or transmitted to it. Scaffolds shall be designed by a qualified person and constructed and loaded in accordance with such design. Scaffolds and scaffold components shall not be loaded in excess of their maximum intended loads or rated capacities, whichever is less. [1926.451(a)(1)]

The scaffold platform shall be planked or decked as fully as possible with the space between the platform and uprights not more than 1 inch wide. When side brackets or odd shaped structures result in a wider opening between the platform and the uprights, the space shall not exceed 9.5 inches. The platform shall not deflect more than 1/60 of the span when loaded. [1926.451(b)(1) & (f)(16)]

The work area for each scaffold platform and the walkway shall be at least 18 inches wide. [1926.451(b)(2)]

Access must be provided when the scaffold platforms are more than 2 feet above or below a point of access. Crossbraces shall not be used as a means of access. [1926.451(e)(1) & (e)(8)]

A competent person shall inspect scaffolds, scaffold components, and ropes on suspended scaffolds before each work shift and after any occurrence that could affect the structural integrity. The competent person also must ensure that prompt corrective action is taken. [1926.451(f)(3) & (d)(10)]

Fall protection - such as a guardrail and/or a personal fall arrest systems - must be provided for each employee working on a scaffold more than 10 feet above a lower level. [1926.451(g)(1)]

The employer shall have a competent person determine the feasibility and safety of providing fall protection for employees erecting or dismantling supported scaffolds. [1926.451(g)(2)]

Stilts may be used on a large area scaffold. [1926.452(y)(1)] (A large area scaffold is a pole, tube and coupler, systems or fabricated frame scaffold erected over substantially the entire work area.)

When a guardrail system is used, the guardrail height shall be equal to the height of the stilts and any alterations to the stilts shall be approved by the manufacturer. [1926.452(y)(2)]

The superintendent is responsible for coordinating delivery and setup of the scaffold.

Scissor Lifts

Employees shall have adequate training and proper authorization prior to operation.

All modifications to any scissor lift, must have written approval from the manufacturer. Never disable reverse alarm beeper on lift.

Employees shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or any other device as a work platform.

Never remove lift guardrails while lift is in operation. Always latch guardrail chain while lift is in operation.

Always advise other workers on lift prior to changing height or position and do not exit a lift until it has reached its lowest position.

Use extreme caution when operating lift on uneven surfaces and to avoid head injuries from objects above when raising lift.

Signs

For the protection of all, signs such as “No Smoking”, “Laser in Use”, “Keep Out”, “Eye Protection Required”, “Out of Order – Do Not Use” and “Authorized Personnel” will be posted as needed.

Employees will obey these signs and directions.

Smoking Policy

No smoking around flammable or explosive areas.

Clients and customers smoking policies shall be followed.

Smoking is only allowed in designated areas.

Steel Erection

The employer shall provide a training program for all employees exposed to fall hazards. The program shall include training and instruction in CFR 29 Part 1926 Subpart M. [1926.761(b) & (b)(1) thru (b)(5)]

All employees required to enter into areas of steel erection shall have received the appropriate training to be able to recognize any and all hazards they may be exposed to and to protect themselves from such hazards.

Storage

All materials stored in tiers will be secured to prevent sliding, falling or collapse. [1926.250(a)(1)]

Aisles and passageways will be kept clear and in good repair. [1926.250(a)(3)]

Weeds and grass in outside storage areas shall be kept under control. [1926.151(c)(3)]

Stored materials may not obstruct exits. [1926.151(d)(1)]

Materials will be stored with due regard to fire characteristics. [1926.151(d)(2)]

Flammable liquids must be kept in approved containers. [1926.152(a)(1)]

Toilets

Toilets shall be provided by the company according to the following minimums:

- 20 or fewer persons – one facility
- 20 or more persons – one toilet seat and one urinal per 40 persons
- 200 or more persons – one toilet seat and one urinal per 50 persons [1926.51(c)(1)]

Washing Facilities

The employer shall provide adequate washing facilities for employees engaged in operations involving harmful substances. [1926.51(f)]

Washing facilities shall be in near proximity to the worksite and shall be so equipped as to enable employees to remove all harmful substances. [1926.51(f)]

Welding, Cutting and Heating

Employers shall instruct employees in the safe means of arc welding and cutting equipment. [1926.351(d)]

When practical, objects to be welded, cut, or heated shall be moved to a designated safe location or, if the objects to be welded, cut or heated cannot be readily moved, all movable fire hazards in the vicinity shall be taken to a safe place, or otherwise protected. [1926.352(a)]

Proper precautions (isolating welding and cutting, removing fire hazards from the vicinity, providing a fire watch, etc.) for fire prevention shall be taken in areas where welding or other “hot work” is being done. No welding, cutting or heating will be done where application of flammable paints, or presence of other flammable compounds, or heavy dust concentrations, creates a fire hazard. Equip torches with anti-flashback devices.

All arc welding and cutting cables shall be completely insulated and be capable of handling the maximum current requirements for the job. There shall be no repairs or splices within 10 feet of the electrode holder, except where splices are insulated, equal to the insulation of the cable. Defective cable shall be repaired or replaced. [1926.351(b)(1) & (b)(2)]

Fuel gas and oxygen hose shall be easily distinguishable and shall not be interchangeable. Hoses shall be inspected at the beginning of each shift and shall be repaired or replaced if defective. [1926.350(f)(1) & (f)(3)]

General mechanical or local exhaust ventilation or air line respirators shall be provided, as required, when welding, cutting or heating:

- zinc, lead, cadmium, mercury, or beryllium bearing, based or coated material in enclosed spaces
 - stainless steel with inert-gas equipment
 - in confined spaces or
 - where an unusual condition can cause an unsafe accumulation of contaminants
- [1926.353(b)(1),(c)(1) through (c)(2) & (d)(1)(iv)]

Arc welding and cutting operations will be shielded by non - combustible or flameproof shields to protect employees from direct arc rays. When electrode holders are left unattended, electrodes will be removed and holder will be placed or protected so they cannot make electrical contact. All arc welding and cutting cables will be completely insulated. Defective cable will be repaired or replaced. [1926.351]

Remove electrodes from unattended electrode holders. [1926.351(d)(1)]

Welding electrode stubs shall be collected in metal containers and not dropped on walking / working surfaces.

Torches shall be lighted ONLY by friction lighters or other approved devices. [1926.350(g)(3)] Cigarette lighters and/or matches are NOT approved lighting devices!

Wire Ropes, Chains, Ropes and other Rigging Equipment

Wire ropes, chains, ropes and other rigging equipment will be inspected prior to use and as necessary during use to assure their safety. Remove defective rigging equipment from service immediately. [1926.251(a)(1)]

Job or shop hooks and links, or makeshift fasteners, formed from bolts, rods or other such attachments will not be used in rigging “systems”. [1926.251(b)(3)]

When U-bolts are used for eye splices, the U-bolt will be applied so the “U” section is in contact with dead end of rope. [1926.251(c)(5)(i)] Never “saddle a dead horse”.

Working / Walking under Suspended Loads

Employees shall NOT work / walk under any suspended load. [1926.701(e)(1) & (2)]

Plan your work and train your crew prior to performing activities with cranes and rigging.

PART 3

SHOP / YARD / OFFICE SPECIFIC SAFETY RULES

Part 3 Shop / Yard / Office Specific Safety Rules is a section of specific safety rules and regulations (OSHA 1910) for the Shop, Yard or Office. Please refer to Part 4 Specific Safety and Health Policies, Programs and Plans for additional safety policies and in-depth, detailed procedures on certain safety issues and work task.

Abrasive Grinding

Machine guarding. Abrasive wheels shall be used only on machines provided with safety guards as defined in the following paragraphs of this section. [1910.215(a)(1)]

The safety guard shall cover the entire spindle end nut, and flange projections. [1910.215(a)(2)]

On offhand grinding machines, work rests shall be used to support the work. They shall be of rigid construction and designed to be adjustable to allow for wheel wear. Work rests shall be kept adjusted closely to the wheel with a maximum opening of one-eighth inch. [1910.215(a)(4)]

The angular exposure of the grinding periphery and sides for safety guards used on machines known as bench and floor stands should not exceed 90 degrees or one-fourth of the periphery. [1910.215(b)(3)]

Immediately before mounting, all wheels shall be closely inspected by the user (ring test) to make sure they have not been damaged in transit, storage or other-wise. The spindle speed of the machine shall be checked to be certain that it does not exceed the maximum operating speed marked on the wheel. [1910.215(d)(1)]

Always leave wheel in working condition for next user.

Access / Egress

Do not jump on or off equipment and/or vehicles.

Keep all equipment, vehicles, footwear, access areas, etc., clean at all times.

Use only safe means of access / egress to and from work areas.

Aerial Lifts

Lift controls shall be tested each day prior to use. [1910.67(c)(2)(i)]

Only trained persons shall operate aerial lifts. [1910.67(c)(2)(ii)]

Employees shall always stand firmly on the floor of the basket and shall not sit or climb on the edge of the basket or use planks, ladders or other devices for a work position. [1910.67(c)(2)(iv)]

A body belt shall be worn and a lanyard attached to the boom or basket when working from an aerial lift. [1910.67(c)(2)(v)]

Never remove the guardrail while the aerial lift is in use. Always use the safety chain while the aerial lift is in use.

Never disconnect the back up alarm on an aerial lift.

Never dismount the aerial lift until it is all the way down.

Always alert other employees on the aerial lift prior to changing the height or the position of the aerial lift.

Use extreme caution when using the aerial lift on uneven surfaces

Use extreme caution to avoid head injuries from overhead objects when lifting aerial lift

Air Tools

Pneumatic power tools shall have a tool retainer installed on each piece of utilization equipment which, without such a retainer, may eject the tool. [1910.243(b)(1)]

Hose and hose connections used for conducting compressed air to utilization equipment shall be designed for the pressure and service to which they are subject. [1910.243(b)(2)]

Clothing

All clothing shall be maintained in good shape and worn correctly.

No clothing shall be worn at work that has excessive holes.

No clothing shall be excessively loose, no “hanging” clothes, no “baggy” pants, etc.

Compressed Air, use of

Compressed air used for cleaning purposes may not exceed 30 psi, and then only in conjunction with effective chip guarding and personal protective equipment. [1910.242(b)]

The use of compressed air to clean off yourself or other workers is not allowed.

Compressed Gas Cylinders

Oxygen and fuel gas cylinders (inside storage), shall be separated 20-feet. [1910.253(b)(2)(ii)]

Cylinder valves will be closed when work is finished and when cylinders are empty or being moved. [1910.253(b)(2)(iii)]

Put valve protection caps in place before compressed gas cylinders are transported, moved or stored. [1910.253(b)(2)(iv)]

Keep cylinders at a safe distance, or shield from welding or cutting operations and place where they cannot become part of an electrical circuit. [1910.253(b)(5)(ii)(J)]

Confined Spaces

The employer shall evaluate the workplace to determine if any spaces are permit-required confined spaces. [1910.146(c)(1)]

Note: Proper application of the decision flow chart in Appendix A to 1910.146 would facilitate compliance with this requirement.

If the workplace contains permit spaces, the employer shall inform exposed employees, by posting signs or by any other equally effective means, of the existence and location of and the danger posed by the permit spaces. [1910.146(c)(2)]

All employees required to enter into confined or enclosed spaces must be instructed as to the nature of the hazards involved, the necessary precautions to be taken, and in the use of required protective and emergency equipment. The employer shall comply with any specific regulations that apply to work in dangerous or potentially dangerous areas. Confined or enclosed spaces include, but are not limited to, storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, tunnels, pipelines and open top spaces more than 4 feet deep, such as pits, tubs, vaults, and vessels.

Only trained and authorized employees are allowed to work in and around confined spaces.

All entrants, attendants or entry supervisors must be fully trained in confined space entry / exit procedures and trained in the 1910.146 OSHA standards.

Cranes and Hoist

All manufacturer specifications and limitations must be adhered to. [1910.179]

All equipment shall be inspected, by a competent person, prior to use. [1910.179(j)(1)(i)]

Drinking Water

An adequate supply of potable water shall be provided in all places of employment. [1910.141(b)(1)(i)]

Potable water containers shall be capable of being tightly closed and be equipped with a tap. [1910.141(b)(1)(iii)]

The common drinking cup is prohibited. [1910.141(b)(1)(vi)]

Electrical - General

Electrical equipment may not be used unless the manufacturer's name, trademark or other descriptive marking by which the organization responsible for the product may be identified. [1910.303(e)]

Portable cord and plug connected equipment and flexible cord sets (extension cords) shall be visually inspected before each use on any shift for external defects. [1910.334(a)(2)(i)]

No cord or tool with a damaged ground plug shall be used. [1910.334(a)(2)(ii)]

All extension cords shall be inspected daily, prior to use, for damage or defects.

Workspaces, walkways and similar locations shall be kept clear of cords.

No cord or tool with a damaged ground plug shall be used. Worn or frayed cables may not be used.

Only qualified electricians are allowed to make electrical repairs on equipment, tools, etc.

Employee Conduct

No "catcalling" and/or any form of sexual harassment will be tolerated.

Willful destruction of company property, may result in immediate dismissal.

Any employee caught stealing anything, will be terminated.

Exit Routes and Signage

At least two exits routes must be available in a workplace to permit prompt evacuation of employees and other building occupants during an emergency. [1910.36(b)(1)]

Exits shall be clearly marked and free of obstructions. [1910.37(a)(3)]

For the protection of all, signs such as "No Smoking", "Laser in Use", "Keep Out", "Eye Protection Required", "Out of Order – Do Not Use" and "Authorized Personnel" will be posted as needed.

Employees will obey these signs and directions.

Eye and Face Protection

Eye and face protection shall be worn when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation. [1910.133(a)(1)]

Goggles will be worn over any employee owned prescription glasses that do not meet industrial safety standards. [1910.133(a)(3)]

Employees involved in welding operations must wear filter lenses or plates of the proper shade number. [1910.133(a)(5)]

Eye and face protective equipment shall meet all requirements of ANSI Z 87.1-1968, "Practice of Occupational and Educational Eye and Face Protection". [1910.133(b)(1)]

Employees exposed to laser beams shall be furnished suitable laser safety goggles, which will protect for the specific wavelength of the laser and be optical density (O.D.) adequate for the energy involved.

Fall Protection

Every open sided floor or platform 4 feet or more above adjacent floor or ground level shall be guarded by a standard railing. [1910.23(c)(1)]

Regardless of height, open-sided floors, walkways, platforms, or runways above or adjacent to dangerous equipment, pickling or galvanizing tanks, degreasing units, and similar hazards shall be guarded with a standard railing and toe board. [1910.23(c)(3)]

Every flight of stairs having four or more risers shall be equipped with standard stair railings or standard stair handrails as specified in paragraphs (d)(1)(i) through (v) of this section, the width of the stair to be measured clear of all obstructions except handrails. [1910.23(d)(1)]

A standard railing shall consist of top rail, intermediate rail, and posts, and shall have a vertical height of 42 inches nominal from upper surface of top rail to floor, platform, runway, or ramp level. The top rail shall be smooth-surfaced throughout the length of the railing. The intermediate rail shall be approximately halfway between the top rail and the floor, platform, runway, or ramp. The ends of the rail shall not overhang the terminal posts except where such overhang does not constitute a projection hazard. [1910.23(e)(1)]

A stair railing shall be of construction similar to a standard railing but the vertical height shall be not more than 34 inches nor less than 30 inches from upper surface of top rail to surface of tread in line with face of riser at forward edge of tread. [1910.23(e)(2)]

Fire Protection

The employer shall maintain and inspect, at least annually, firefighting equipment to assure the safe operational condition of the equipment. [1910.156(d)]

The employer shall provide portable fire extinguishers and shall mount, locate and identify them so that they are readily accessible to employees without subjecting the employees to possible injury. [1910.157(c)(1)]

The employer shall distribute portable fire extinguishers for use by employees on Class A & Class D fires so that the travel distance for employee to any extinguishers is 75 feet or less. [1910.157(d)(2)] & [1910.157(d)(6)] and a Class B & Class C fire so that the travel is 50 feet or less. [1910.157(d)(4)] & [1910.157(d)(5)]

First Aid

The employer shall insure the availability of medical personnel for advice and consultation on matters of occupational health. [1910.151(a)]

In the absence of an infirmary, clinic, hospital, or physician, that is reasonably accessible in terms of time and distance to the worksite, which is available for the treatment of injured employees, a person who has a valid certificate in first-aid training from the U.S. Bureau of Mines, the American Red Cross, or equivalent training that can be verified by documentary evidence, shall be available at the worksite to render first aid. [1910.151(b)]

First aid supplies shall be easily accessible when required. [1910.151(b)]

Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use. [1910.151(c)]

The contents of the first aid kit shall be placed in a weatherproof container with individual sealed packages for each type of item, and shall be checked by the employer at least weekly to ensure that the expended items are replaced.

Proper equipment for prompt transportation of the injured person to a physician or hospital, or a communication system for contacting necessary ambulance service, shall be provided.

In areas where 911 is not available, the telephone numbers of the physicians, hospitals, or ambulances shall be conspicuously posted.

Flammable and Combustible Liquids

This paragraph shall apply only to the storage of flammable or combustible liquids in drums or other containers (including flammable aerosols) not exceeding 60 gallons individual capacity and those portable tanks not exceeding 660 gallons individual capacity. [1910.106(d)(1)(i)]

Only approved containers and portable tanks shall be used. Metal containers and portable tanks meeting the requirements of and containing products authorized by chapter I, title 49 of the Code of Federal Regulations (regulations issued by the Hazardous Materials Regulations Board, Department of Transportation), shall be deemed to be acceptable. [1910.106(d)(2)(i)]

Flammable or combustible liquids, including stock for sale, shall not be stored so as to limit use of exits, stairways, or areas normally used for the safe egress of people. [1910.106(d)(5)(i)]

Storage shall be prohibited except that which is required for maintenance and operation of building and operation of equipment. Such storage shall be kept in closed metal containers stored in a storage cabinet or in safety cans or in an inside storage room not having a door that opens into that portion of the building used by the public. [1910.106(d)(5)(iii)]

Suitable fire control devices, such as small hose or portable fire extinguishers, shall be available at locations where flammable or combustible liquids are stored. [1910.106(d)(7)(i)]

Foot Protection

Employees shall wear protective footwear when working in areas where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, and where employee's feet are exposed to electrical hazards. [1910.136(a)]

No sneakers, tennis shoes or open toed shoes are permitted in the shop / yard areas.

Forklift Safety

The employer shall certify that each operator has been trained and evaluated as required by 1910.178(L)(6).

Employees shall have adequate training and proper authorization prior to operation

Forklift extensions should always be no more than two inches off the floor when driving forklift un-loaded.

When forklift is being used to move material, be cautious of overhead objects such as conduit, lights, etc.

Never speed or turn too quickly. When forklift is not in use the brake should be set and the machine in park.

Always use caution and watch out for people around corners. Always blow the horn when going through a doorway or around a corner.

Only one person is allowed on forklift at a time.

Gases, Vapors, Fumes, Dusts, and Mists

Exposure to toxic gases, vapors, fumes, dusts, and mists at a concentration above those specified in the "Threshold Limit Values of Airborne Contaminants for 1970" of the ACGIH, shall be avoided. (American Conference of Government Industrial Hygienists)

When engineering and administrative controls are not feasible to achieve full compliance, protective equipment or other protective measures shall be used to keep the exposure of employees to air contaminants within the limits prescribed. Any equipment and technical measures used for this purpose must first be approved for each particular use by a competent industrial hygienist or other technically qualified person.

Hand Tools

Employers shall not issue or permit the use of unsafe hand tools. [1910.242(a)]

Hard Hats

The employer shall ensure that each affected employee wears a protective helmet when working in areas where there is a potential for injury to the head from falling objects. [1910.135(a)(1)]

Hard hats shall be worn according to the manufacturer's recommendations.

Hearing Protection

When engineering or administrative controls fail to reduce sound levels within the limits of Table G-16, ear protective devices shall be provided and used. [1910.95(a)]

In all cases where sound levels exceed the values shown in the Safety and Health Standards, a continuing, effective hearing conservation program shall be administered. [1910.95(c)(1)]

Housekeeping / Clean-up

General Requirements

All places of employment, passageways, storerooms, and service rooms shall be kept clean and orderly and in a sanitary condition. [1910.22(a)(1)]

Clean up everyday all areas, including but not limited to, vehicles, shop, office, equipment, tools, etc.

Trash and debris will be kept clear from work areas at all times.

Containers will be provided for collection and separation of all trash.

At the end of each phase of work, return all tools and excess material to proper storage. Clean up all debris before moving on to the next phase. Each employee, is responsible for keeping their work areas clean.

Aisles and Passageways

Where mechanical handling equipment is used sufficient safe clearance shall be allowed for aisles, at loading docks, through doorways and whenever turns or passage must be made. Aisles and passageways shall be kept clear and in good repairs, with no obstruction across or in aisles that could create a hazard. [1910.22(b)(1)]

Handling Materials

Where mechanical handling equipment is used sufficient safe clearance shall be allowed for aisles, at loading docks, through doorways and whenever turns or passage must be made. Aisles and passageways shall be kept clear and in good repair, with no obstruction across or in aisles that could create a hazard. Permanent aisles and passageways shall be appropriately marked. [1910.176(c)]

Ladders

Ladders must be maintained in good usable condition at all times. [1910.26(c)(2)(iv)]

A simple rule for setting up a ladder at the proper angle is to place the base a distance from the vertical wall equal to $\frac{1}{4}$ the working length of the ladder. [1910.26(c)(3)(i)]

No ladders shall be used in a horizontal position as platforms, runways, or scaffolds. Extension ladders must be retracted before transporting. [1910.26(c)(3)(vii)]

All ladders must be secured top and bottom. Always face ladders when going up or down. [1910.26(c)(3)(v)]

Portable ladders shall have nonconductive side-rails if they are used where the employee or the ladder could contact exposed energized parts. [1910.333(c)(7)]

Never use the top or the top step of a stepladder. [1910.25(d)(2)(xii)]

No ladder should be used to gain access to a roof unless the top of the ladder shall extend at least 3 feet above the point of support, at eave, gutter or roof line. [1910.25(d)(2)(xv)]

Materials and tools should be hoisted up or down ladders with a rope, cable or other safe hoisting methods.

Lasers

Only qualified and trained employees shall be assigned to install, adjust and operate laser equipment.

"Laser in Use" signs shall be posted at all times lasers are in operation.

Lighting

Each exit route must be adequately lighted so that an employee with normal vision can see along the exit route. [1910.37(b)(1)]

Additional lighting if needed and maintenance of lighting shall be provided at stairways, aisle ways, walkways and entry / exit areas of all work areas.

Liquefied Petroleum Gas

Containers, and first stage regulating equipment if used, shall be located outside of buildings, except under one or more of the following. [1910.110(b)(6)(i)(a)] through [1910.110(b)(6)(i)(ix)] & [1910.110(6)(i)]

Engines on vehicles shall be shut down while fueling if the fueling operation involves venting to the atmosphere. [1910.110(e)(2)(v)]

All cylinders shall meet DOT specifications. [1910.110(e)(3)(ii)]

No more than two LP-Gas containers shall be used on an industrial truck for motor fuel purposes.
[1910.110(e)(13)(ii)]

Lock Out / Tag Out

Controls that are to be deactivated during the course of work on energized or de-energized equipment or circuits shall be tagged. [1910.147]

Equipment or circuits that are de-energized shall be rendered inoperative and shall have tags attached at all points where such equipment or circuits can be energized. [1910.147]

Tags shall be placed to identify plainly the equipment or circuits being worked on. [1910.147]

Manual Lifting

Employees should be prepared for lifting task assigned and use legs to lift, instead of back or obtain assistance.

Office Safety

Office work is generally considered relatively safe, however, conditions and unsafe practices occur that can and do cause accidents.

Exercise care in lifting office machines, filing cases, ledgers, boxes, and bundles of office supplies. All persons lifting any material should observe proper lifting positions so as to lift with the leg muscles rather than putting unnecessary strain on the back. Large boxes or bundles of supplies should be moved by hand truck or unpacked and handled in smaller loads.

Bulky objects should not be carried in such a way as to obstruct the view ahead or interfere with free use of hand rails on stairways. Get help if necessary.

Liquids spilled on floors shall be cleaned up immediately. Loose objects, such as paper clips, pencils, and other small objects, should be kept off the floors.

Extension cords to office machines should be located in such a manner as to eliminate tripping hazards.

Desk and file cabinet drawers should be kept closed except when being used. Open only one drawer at the time to avoid tipping the cabinet.

Use an adequate stepladder to reach objects on overhead shelves.

Walk ... do not run ... in hallways or up and down stairways. Always use hand rails and "grabrails" on stairways.

Pointed objects, such as knives, and scissors, should not be carried in the pocket with the point exposed. Letter openers, knives, blades, and scissors should be used with care and properly stored when not in use.

Gummed strips on envelopes should be moistened with a device. Use letter openers to open envelopes and avoid sliding hands along the edge of paper.

Keep fingers clear when using stapling machines. Keep fingers away from the cutting edge of paper cutters. Never leave a hand operated cutter blade in the raised position.

Defective electrical cords or connections on office machines shall be removed from service until repaired.

Extreme care should be used with all temporary portable heaters, in the office areas.

Personal Protective Equipment

Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices and protective shields and barriers, shall be provided, used and maintained in a sanitary and reliable condition whenever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact. [1910.132(a)]

Defective or damaged personal protective equipment shall not be used. [1910.132(e)]

The employer is responsible for requiring the wearing of appropriate personal protective equipment in all operations where there is an exposure to hazardous conditions, or where the need is indicated for using such equipment to reduce the hazards to the employees.

Respiratory Protection

Employees required to use respiratory protective devices, shall be thoroughly trained in their use. [1910.134]

When engineering or administrative controls are not effective in maintaining acceptable atmospheres, appropriate respiratory protective equipment shall be provided by the employer and shall be used. [1910.134(a)(1)]

Respiratory protective devices, shall be approved by the National Institute for Occupational Safety and Health or acceptable to the U.S. Department of Labor for the specific contaminant to which the employee is exposed. [1910.134]

The employer shall select and provide an appropriate respirator based on the respirator hazard to which the worker is exposed and workplace and user factors that affect respirator performance and reliability. [1910.134(d)(1)(i)]

The employer shall select a NIOSH – certified respirator. [1910.134(d)(1)(ii)]

The employer shall provide a medical evaluation to determine the employee's ability to use a respirator. [1910.134(e)(1)]

Respiratory protective equipment shall be cleaned and maintained in good condition. [1910.134(h)(1)(i)]

Rules for Drivers of Vehicles

No employee shall operate vehicles without adequate training and proper authorization.

Drivers must not take chances. To arrive safely is more important than to arrive on time.

At all times be cautious of other drivers on the road.

Display a positive company image while driving any vehicle.

Positively no tailgating. Maintain a proper distance between you and all other drivers.

Obey all speed limits and observe extreme caution in school zones.

Each employee who drives a vehicle must have a valid driver's license for that type of vehicle. Prior to being hired to operate that vehicle, your license will be checked by the management of the Company. It is the employee's responsibility to maintain a valid license thereafter.

When pulling a trailer, compressor, tack wagon, or other unit, always hook up safety chains and put a pin through the hitch.

Anyone pulling a trailer is responsible for checking for proper tags, tires, lights, signals, mirrors, fuel, etc.

All accidents must be reported to the office within 1 hour.

If an accident occurs, the driver must follow the procedures as outlined in the Substance Abuse Program.

No unauthorized "Riders" in vehicles.

Rules for Operators

No employee shall operate equipment without adequate training & proper authorization.

Operators shall not operate any equipment that is not in safe working order.

Operators shall inspect their equipment prior to beginning work to ensure the equipment is in safe condition.

All accidents must be reported to the office within 1 hour.

If an accident occurs, the operator must follow the procedures as outlined in the Substance Abuse Program.

No "Riders" on equipment.

No employee shall ride any piece of equipment in any fashion or ride on anything attached to a piece of equipment such as a pipe or other equipment. If an employee is on or in a piece of motorized movable equipment, it shall be equipped with a seat (if intended for sit-down operation) and a seat belt and the seat belt shall be worn snugly.

All forklift operators require specific training prior to operating the equipment.

Scaffolds

Scaffold means any temporary elevated platform (supported or suspended) and its supporting structure (including points of anchorage) used for supporting employees or material or both.

Scaffolds shall be furnished and erected in accordance with this standard for persons engaged in work that cannot be done safely from the ground or from solid construction, except that ladders used for such work shall conform to. [1910.25] & [1910.26] & [1910.28(a)(1)]

Fall protection – such as a guardrail and/or a personal fall arrest systems – must be provided for each employee working on a scaffold more than 10 feet above a lower level. [1910.28(b)(15)]

Scissor Lifts

Employees shall have adequate training and proper authorization prior to operation.

All modifications to any scissor lift, must have written approval from the manufacturer.

Employees shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or any other device as a work platform.

Never remove lift guardrails while lift is in operation.

Always latch guardrail chain while lift is in operation.

Do not exit a lift until it has reached its lowest position.

Always advise other workers on lift prior to changing height or position.

Use extreme caution when operating lift on uneven surfaces.

Use extreme caution to avoid head injuries from objects above when raising lift.

Smoking Policy

No smoking around flammable or explosive areas.

Clients and customers smoking policies shall be followed.

Smoking is only allowed in designated areas.

Storage

Aisles and passageways will be kept clear and in good repair. [1910.176(a)]

All materials stored in tiers will be secured to prevent sliding, falling or collapse. [1910.176(b)]

Materials will be stored with due regard to fire characteristics, Weeds and grass in outside storage areas shall be kept under control. [1910.176(c)]

Toilets

Toilets shall be provided in all places of employment in accordance with table J-1. [1910.141(c)(1)(i)]

Washing Facilities

The employer shall provide adequate washing facilities for employees engaged in operations where hazardous substances may be harmful to employees. Such facilities shall be in near proximity to the worksite; in areas where exposures are below permissible exposure limits and which are under controls of the employer; and shall be so equipped as to enable employees to remove hazardous substances from themselves. [1910.120(n)(6)]

Welding, Cutting, Heating and Brazing

Employers shall instruct employees in the safe use of welding equipment.

All workers shall follow the requirements set forth in the OSHA standards in accordance with welding, cutting and brazing. [1910.252] thru [1910.255]

If the object to be welded or cut cannot readily be moved, all movable hazards in the vicinity shall be taken to a safe place. [1910.252(a)(1)(i)]

Proper precautions (isolating welding and cutting, removing fire hazards from the vicinity, providing a fire watch, etc.) for fire prevention shall be taken in areas where welding or other "hot work" is being done. No welding, cutting or heating will be done where application of flammable paints, or presence of other flammable compounds, or heavy dust concentrations, creates a fire hazard. Equip torches with anti-flashback devices. See fire prevention precautions. [1910.252(a)(2)(xv)]

Cylinders shall be kept away from radiators and other sources of heat. [1910.253(b)(2)(i)]

Inside of buildings, cylinders shall be stored in a well-protected, ventilated, dry location, at least 20 feet from highly combustible materials such as oil or excelsior. Cylinders should be stored in definitely assigned places away from elevators, stairs, or gangways. Assigned storage spaces shall be located where cylinders will not be knocked over or damaged by passing or falling objects, or subject to tampering by unauthorized persons. Cylinders shall not be kept in unventilated enclosures such as lockers and cupboards. [1910.253(b)(2)(ii)]

Valve protection caps, where a cylinder is designed to accept a cap, shall always be in place, hand tight, except when cylinders are in use or connected for use. [1910.253(b)(2)(iv)]

Employees exposed to the hazards created by welding, cutting, or brazing operations shall be protected by personal protective equipment in accordance with the requirements of [1910.132]. Appropriate protective clothing required for any welding operation will vary with the size, nature and location of the work to be performed. [1910.252(b)(3)]

Oxygen cylinders shall not be stored near highly combustible material, especially oil and grease; or near reserve stocks of carbide and acetylene or other fuel gas cylinders, or near any other substance likely to cause or accelerate fire; or in an acetylene generator compartment. [1910.253(b)(4)(i)]

Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of 20 feet or by a noncombustible barrier at least 5 feet high having a fire-resistance rating of at least one-half hour. [1910.253(b)(4)(iii)]

Unless cylinders are secured in a special truck, regulators shall be removed and valve-protection caps, when provided for, shall be put in place before cylinders are moved. [1910.253(b)(5)]

Welding equipment shall be chosen for safe application to the work to be done as specified in paragraph (b) of this section. [1910.254(a)(1)]

Workmen designated to operate arc welding equipment shall have been properly instructed and qualified to operate such equipment as specified in paragraph (d) of this section. [1910.254(a)(3)]

Printed rules and instructions covering operation of equipment supplied by the manufacturers shall be strictly followed. [1910.254(d)(6)]

Electrode holders when not in use shall be so placed that they cannot make electrical contact with persons, conducting objects, fuel or compressed gas tanks. [1910.254(d)(7)]

Cables with splices within 10 feet of the holder shall not be used. The welder should not coil or loop welding electrode cable around parts of his body. [1910.254(d)(8)]

The operator should report any equipment defect or safety hazard to his supervisor and the use of the equipment shall be discontinued until its safety has been assured. Repairs shall be made only by qualified personnel. [1910.254(d)(9)(i)]

Cables with damaged insulation or exposed bare conductors shall be replaced. Joining lengths of work and electrode cables shall be done by the use of connecting means specifically intended for the purpose. The connecting means shall have insulation adequate for the service conditions. [1910.254(d)(9)(iii)]

General mechanical or local exhaust ventilation or air line respirators shall be provided, as required, when welding, cutting or heating:

- zinc, lead, cadmium, mercury, or beryllium bearing, based or coated material in enclosed spaces
- stainless steel with inert-gas equipment
- in confined spaces or
- where an unusual condition can cause an unsafe accumulation of contaminants

Welding electrode stubs shall be collected in metal containers and not dropped on the floor or other walking / working surface.

Torches shall be lighted ONLY by friction lighters or other approved devices. Cigarette lighters and/or matches are NOT approved lighting devices!

Wire Ropes, Chains, Ropes and other Rigging Equipment

Wire ropes, chains, ropes and other rigging equipment will be inspected prior to use and as necessary during use to assure their safety. Remove defective rigging equipment from service immediately. [1910.184]

Job or shop hooks and links, or makeshift fasteners, formed from bolts, rods or other such attachments will not be used in rigging "systems".

When U-bolts are used for eye splices, the U-bolt will be applied so the "U" section is in contact with dead end of rope. Never "saddle a dead horse".

PART 4

SPECIFIC SAFETY AND HEALTH POLICIES, PROGRAMS AND PLANS

Part 4 Specific Safety and Health Policies, Programs and Plans is a section of additional safety policies and in-depth, detailed procedures on certain safety issues and work task. Please refer to Part 2 and Part 3 for Specific Safety and Health rules and regulations (OSHA 1926 & 1910).

SUBSTANCE ABUSE POLICY

Miller Mechanical

HAZARD COMMUNICATION PROGRAM

The Hazard Communication Program has been developed by the company in accordance with OSHA Regulations 1926.21 and 1926.59 and 1910.1200. Employees will be trained under the guidelines of the program.

Any questions or comments regarding the Hazard Communication Program should be directed to the supervisor and/or Management.

Chemical Inventory

Hazardous chemicals are inventoried by the office on a regular basis. Any new chemicals brought to the work site by the Company will be included on the hazardous chemical inventory list.

Container Labeling

All chemicals on-site are used from an original container or a temporary container, only in small quantities for immediate use. Any chemical left after work is completed must be returned to the original container, if it is not returned to the original container it must be labeled. No unmarked containers of any size are to be left in the work area unattended.

The Company will rely on the manufacturer's applied labels whenever possible, and will ensure that these labels are not removed or if damaged are replaced. Each container will be labeled with the identity of the hazardous chemical and any appropriate hazard warnings.

Safety Data Sheets (SDS)

The Company will have an up-to-date copy of the safety data sheets (SDS). Each SDS will be in English and shall contain:

- a) The name of the chemical.
- b) The physical hazards.
- c) The health hazards.
- d) The primary route of entry.
- e) The OSHA permissible exposure limit.
- f) Any general precautions for safe handling.
- g) The date of preparation or the date of the last change to the SDS.
- h) The name, address and telephone number of the chemical manufacturer.

SDS are kept at the office and are accessible to all employees. Job specific SDS will be readily available to the employees working on specific job sites. If an employee cannot locate an SDS sheet contact the office.

Supervisors are responsible for having the appropriate up-to-date SDS available to employees.

Employee Training in Haz Com

General

Employees are trained to work safely with hazardous chemicals. Employee training will include:

- a) Methods that may be used to detect a release of hazardous chemicals in the workplace.
- b) Physical and health hazards associated with chemicals.
- c) Protective measure to be taken.
- d) Safe work practices, emergency response and use of personnel protective equipment.
- e) Information on the Hazardous Communication Standard.
- f) Labeling and warning systems.
- g) The employees Right to Know.
- h) And an understanding of the Safety Data Sheet (SDS).
- i) Global Harmonization
- j) Pictograms

On - Site Training

Supervisors are responsible for site specific hazardous chemical training. Training includes:

- a) Types of chemicals on the job site.
- b) Hazards created by chemicals on the job site.
- c) First aid and emergency procedures, when exposed to specific chemicals.
- d) Using appropriate personnel protective equipment for hazardous chemical handling.

Hazards of Non - Routine Tasks

Supervisors inform employees of any special tasks that may arise which would involve possible exposure to hazardous chemicals.

Review of safe work procedures and use of required PPE is conducted prior to the start of such tasks. Where necessary, areas are posted to indicate the nature of the hazard involved.

Multi - Employer Workplaces

Other on - site employers are required to adhere to the provisions of the Hazard Communication Standard.

The Company will provide to other employers on multi - employer job sites, copies of SDS on hazardous chemicals that are used by the Company. Those employers will be responsible for providing their employees with the information necessary to prevent exposure to the Company's hazardous chemicals.

Employers working on the job site with the Company will provide the Company with SDS on each hazardous chemical that they use on the job site. The Company is responsible for providing its employees with the information necessary to prevent exposure to the other employer's hazardous chemicals.

Hazardous Material Handling Procedures

- All hazardous materials and substances must be ordered through purchasing.
- Purchasing must obtain SDS sheets for new chemicals, materials or products not listed on the divisions' hazardous materials list.
- Designated safety representative is responsible to maintain, gather and pass out SDS sheets.
- Purchasing must make sure safety representative receive copies of SDS sheets for all new chemicals.
- Any MMCE employee authorized to purchase a chemical is responsible for reviewing product SDS sheets and for training employees using chemical.
- SDS should be reviewed annually and updated whenever the manufacturer changes the forms.
- Old forms should be retained until all the material for which it applies has been used or removed from the workplace.
- Provide proper training and equipment for handling hazardous materials and substances.
- All hazardous materials, substances, chemicals must be ordered by an authorized person through purchasing and received by the authorized personnel.
- Safety office will keep the master SDS book current. (Right To Know (SDS) book will contain a copy of facility HAZCOM written program).
- Purchasing shall request SDS on each chemical substance ordered.
- Any authorized person who orders a chemical is responsible to review the SDS sheet from employees who use that chemical.
- Each division must develop a master chemical inventory list.
- Safety Representative is responsible for reviewing the master chemical inventory list and obtaining the most current SDS sheet.
- Safety Representative is responsible for HAZCOM training for each new employee.

Miller Mechanical

BLOODBORNE PATHOGENS POLICY

PURPOSE AND SCOPE

The purpose of this procedure is to establish guidelines to protect the employees of Miller Mechanical from exposure to blood or other potentially infectious material during treatment of injured workers or clean-up at the scene of a job-related injury.

This procedure applies to all Miller Mechanical employees who will render first aid treatment to injured workers on a Miller Mechanical project. It also applies to those employees who may have to clean up any area where a job-related injury involving blood or other potentially infectious material is present.

DEFINITIONS APPLICABLE TO THIS PROCEDURE

1. Blood means human blood, human blood components and products made from human blood
2. Bloodborne Pathogens means pathogenic microorganisms that are present in human blood and can cause diseases in humans. These pathogens include, but are not limited to, Hepatitis (HBV) & Human Immunodeficiency Virus (HIV-"Aids")
3. Contaminated means the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.
4. Decontamination means the use of physical or chemical means to remove, inactivate or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use or disposal.
5. Engineering controls means equipment that is designed to isolate or remove the bloodborne pathogen hazard from the workplace.
6. Exposure Incident means a specific eye, mouth or other mucus membrane, non-intact skin or contact with blood or other potentially infectious material from the performance of an employee's collateral first-aid or clean-up duties.
7. HBV means the Hepatitis B Virus; causes inflammation of the liver and may lead to long term liver damage including cirrhosis and cancer.
8. HCV means the Hepatitis C Virus; causes inflammation of the liver and may lead to long term liver damage including cirrhosis and cancer.
9. HIV means the Human Immunodeficiency Virus; causes inflammation of the liver and may lead to long term liver damage including cirrhosis and cancer.
10. Occupational exposure means reasonably anticipated (including the potential for contact as well as contact with blood or OPIM) skin, eye, mucous membrane, non-intact skin contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

11. Other Potentially Infectious Material means, for the purpose of this procedure, any fluid excreted from the human body.
12. Personal Protective Equipment (PPE) means specialized clothing or equipment (gloves, masks, goggles, etc.) worn by employees for protection from a hazard. General work clothes not intended to function as protection against a hazard are not considered to be personal protective equipment.
13. Universal Precautions means an approach to infection control. According to the concept of Universal Precautions, all human body fluids are treated as if they are known to be infectious for Hepatitis, HIV or other bloodborne pathogens.

PROCEDURE – METHODS OF COMPLIANCE

1. General

Universal precautions shall be observed to prevent contact with blood or other potentially infectious materials. For the purpose of this procedure, all body fluids are to be considered "Other Potentially Infectious Materials."

2. First-Aid Treatment

- a. No Miller Mechanical employee shall provide first-aid treatment where there is the potential for exposure to blood or other potentially infectious material unless proper protective equipment is worn.
- b. Immediately, or as soon as possible after the first-aid treatment is rendered, the first-aid provider shall thoroughly wash his/her hands and any other skin exposed with soap and water. In the absence of soap and water, the employee shall use an antiseptic hand cleaner in conjunction with a clean cloth, paper towel or antiseptic towelette to clean hands and other exposed areas of the body. Washing with soap and water shall be done as soon as feasible.
- c. Immediately, or as soon as possible after use, contaminated gloves, gauze sponges, etc. shall be placed in biohazard disposal bags. Biohazard disposal bags are to be placed in each first-aid kit.
- d. Immediately, or as soon as possible after the treatment of any injury involving blood or other potentially infectious material, the provider of first-aid shall notify the Miller Mechanical Human Resources. It is mandatory that this notification be made within the same day as the occurrence. The first-aid provider shall also complete an Exposure Incident Form and forward immediately to Human Resources.

3. First-aid Kits

- a. All Miller Mechanical job-site kits shall be equipped with the appropriate personal protective equipment (latex gloves, eye protection, masks, etc.) to protect employees from hazards associated with bloodborne pathogens.
- b. All materials used for treatment of injuries shall be replaced in the first-aid kit immediately or as soon as possible.

c. It shall be the responsibility of the Miller Mechanical project superintendent to routinely inspect, inventory and ensure that the first-aid kit is adequately stocked.

d. In addition to first-aid supplies, personal protective equipment and Bio-Medical bags, each first-aid kit shall contain a bottle of undiluted bleach. This bleach shall be diluted to a 1:10 solution with water and used for decontamination.

4. Housekeeping

a. All materials used in the treatment of injuries, which are contaminated with blood or other potentially infectious material, shall not be disposed of in trash receptacles. Contaminated materials (latex gloves, sponges, etc.) shall be placed in the Bio-Medical disposal bags that are kept with the first-aid kits. These bags shall be transported to a nearby hospital for disposal.

b. Tools, clothing, counter tops or any other areas contaminated by blood or other potentially infectious material shall be thoroughly cleaned with a 1:10 solution of bleach, then washed with soap and water. Materials contaminated by the clean-up process shall be placed in Bio-Medical bags for disposal.

c. Any employee involved in the clean-up process following an incident involving blood or other potentially infectious material shall wear, at a minimum, latex gloves for bloodborne pathogens.

5. Exposure Follow-up

a. Upon receipt of notification that through the treatment of an injured employee or worker, a possible exposure to blood or other potentially infectious material has occurred, Miller Mechanical shall:

- (1) Determine if an exposure to blood or other potentially infectious material has occurred.
- (2) Offer the exposed employee, if unvaccinated, a Hepatitis B inoculation within 24 hours of the exposure.
- (3) Obtain a copy of the exposure notification form and maintain a file.
- (4) If the exposed employee chooses not to avail him/herself of this inoculation, he/she shall be required to sign a form waiving this treatment. The signed declaration shall be maintained on file with the exposure notification form.

6. Training

a. All employees who routinely provide first-aid treatment to injured workers shall receive training in Universal Precautions, the guidelines contained in this procedure and the guidelines established by OSHA's Bloodborne Pathogens standards.

b. They shall be given a copy of this procedure and made aware of their right to receive, at no cost, post exposure inoculations of the Hepatitis B vaccine. They shall be made aware that should they decline this inoculation, they must sign a treatment waiver form, which will be kept on file.

c. All training shall be documented and maintained on file at the Miller Mechanical main and project management offices.

Miller Mechanical EXPOSURE INCIDENT FORM

Location: _____ Date of Incident: _____

Name of
First-Aid Provider: _____

Name of
Injured Employee: _____

Nature of Injury (describe in detail)

Was personal protective equipment used? Yes No

Was contaminated material disposed of properly in Bio-Medical bags? Yes No

Was any other employee exposed to blood or OPIM? Yes No

If "yes," give names of those exposed:

Employee Signature _____ Date _____

Note: Miller Mechanical main office must be notified immediately by telephone when any incident occurs. This form shall be completed and forwarded to Miller Mechanical as soon as possible.

Miller Mechanical EXPOSURE TREATMENT WAIVER

I, certify that as a result of providing first-aid to :

on _____, a potential exposure to blood or another potentially infectious material occurred. I also certify that the management of Miller Mechanical has, within 24 hours of that exposure, offered me inoculations of the Hepatitis B vaccine. By my signature below, I waive my right to receive treatment through this vaccination.

Signature of first-aid provider _____

Date _____

Witness _____

Date _____

BLOODBORNE PATHOGENS EXPOSURE CONTROL PLAN

The objectives of the Exposure Control Plan are to:

- Provide information on procedures and regulations regarding bloodborne pathogens;
- Protect employees from health hazards associated with bloodborne pathogens;
- Provide information on appropriate treatment and counseling to employees exposed to bloodborne pathogens.

Exposure Categories

OSHA has established three (3) exposure categories for protection against occupational exposure to infectious diseases including HBV and HIV infections. These categories are as follows:

Category I:

Tasks that involve exposure to human blood, body fluids, or tissues. All procedures or other job-related tasks that involve an inherent potential for mucous membrane or skin contact with human blood, body fluids, or tissues, OR a potential for spills or splashes of them are Category I tasks. Use of appropriate personal protective equipment will be required for every employee engaged in Category I tasks.

Category II:

Tasks that involve no exposure to human blood, body fluids, or tissues but employment may require performing unplanned Category I tasks. The normal work routine involves no exposure to blood, body fluids, or tissues, BUT exposure or potential exposure may be required as a condition of employment. Appropriate personal protective equipment will be readily available to every employee engaged in Category II tasks.

Category III:

Tasks that involve no exposure to human blood, body fluids or tissues, AND Category I tasks are not a condition of employment. The normal work routine involves no exposure to human blood, body fluids or tissues (although situations may be imagined or hypothesized under which anyone, anywhere, might encounter potential exposure to body fluids). Persons who perform these duties are not called upon as part of their employment to perform or assist in emergency medical care or first aid or to be potentially exposed in some other way.

Category I job classifications:

None.

Category II job classifications shall include:

Safety and HR personnel who engage in collection of specimens for drug and alcohol testing.

Category III job classifications shall include:

Auto mechanics, HVAC Installers, Plumbers, Service Technicians and employees trained to render first aid or CPR.

Category III tasks and procedures that may result in occupational exposure;

1. Disposing of soiled tissues or other debris soiled with visible blood from classrooms, laboratories, hallways or offices.
2. Physical contact with other employees or visitors with
3. Provision of emergency first aid or CPR until professional help arrives.

Miller Mechanical

FALL PROTECTION POLICY

Purpose

This Fall Protection Policy is designed to provide guidance for all Miller Mechanical job sites for establishing procedures to identify, evaluate, and control falls from elevations at all times. This program focuses on orientation, training, and enforcement to ensure fall protection guidelines are implemented and adhered to by all project personnel. The purpose of Fall Protection Policy is to provide maximum protection against falls.

The management of Miller Mechanical has adopted a Fall Protection Policy to eliminate fall accidents in our operations. Management and supervision will be responsible and accountable for ensuring the success of the program by integrating this program into the company's operations.

Goal

The goal of this program is to eliminate all falls from elevations by identifying and managing fall exposures.

Responsibility

All levels of management and supervision are responsible for supporting and enforcing this program to ensure 100% compliance by all personnel. Management, estimating, scheduling, and project management personnel are responsible for pre-planning safety into the job by identifying and predicting potential fall exposures both during the preconstruction phase and during construction. Each discipline shall plan safety into the job with priorities placed on engineering solutions to the hazards.

Personal fall protection systems shall only be used as a backup method to primary fall protection systems, such as guardrails, or when there is no other feasible or practical means for safely accomplishing the work.

Accountability

All levels of management and supervision shall be accountable for the safety of job site personnel. Job site supervision is directly responsible for using the Fall Protection Policy as a means to control falls from elevations. Management teams shall have the goal of zero fall-related accidents for each job site. Measurement of performance will take into account actual results related to this goal. The direct costs of any accident will be charged to the cost of the job site involved. Management, estimating, and scheduling personnel shall be accountable for pre-planning, designing, budgeting, and scheduling Fall Protection into each job site.

Pre-Construction Planning

Pre-planning must begin during the pre-bid phase of each job site and continue.

1. Pre-Bid Phase:
 - A. Management:
Management shall review plans for job sites during the pre-bid phase to determine the nature and scope of Fall Protection needs, as well as any necessary design changes and engineering controls needed.
 - B. Estimating:
Estimating personnel must include the cost for Fall Protection into the bid / proposal. Input from management should be utilized as necessary. The cost of subcontract bids should include the cost of implementing an acceptable Fall Protection Policy.
 - C. Contract Administration:
The subcontract should include language requiring a Fall Protection Policy.

2. Pre-Startup:

- A. Management:
The management team shall hold a review meeting prior to startup of any work on a job site. The purpose of the meeting shall be to review plans and to identify and evaluate all potential fall exposures in each phase of construction.
- B. Supervisors:
The regular Fall Protection inspection must be incorporated into an overall Fall Protection Policy.
- C. Scheduling:
Design changes, engineering controls, and installation of fall protection devices, i.e. anchorages, guardrails, etc., must be incorporated into the schedule to ensure completion in a timely manner.

Pre – Task Safety Analysis

Supervisors must analyze all elevated tasks prior to assigning work to determine all existing and potential fall protection needs and to ensure adequate fall protection systems are provided.

Employee Safety Training

Pre-task safety instruction must be given to each person assigned to work in elevated areas prior to commencing work activities. New hire safety orientation training must be conducted for all new hires immediately upon the beginning of employment. The orientation shall include the company's Fall Protection Policy, procedures, and work rules. Regular safety training will be held with all field crews. Fall Protection should be included in these training sessions on a regular basis or when an upcoming work assignment may involve unusual or non-routine fall exposures. Written documentation of all employees training shall be maintained.

Procedures

Fall protection systems shall include, but are not limited to; the following fall exposure areas:

- A. Building construction activities
 - Formwork
 - Reinforcing steel deliveries, rigging, erection
 - Concrete placement
 - Structural / miscellaneous steel erection
 - Precast concrete erection
- B. Scaffolding / Hoisting activities
 - Aerial lifts
 - Movable ladders
 - Crane erection / dismantling
 - Hoisting areas including platforms, docks, chutes
- C. Floor / Wall penetrations and exposures
 - Elevator shafts
 - Stairways
 - MEP shafts
 - Perimeter edges
- D. All exterior skin installation including, but not limited to, roofing, stone, masonry, waterproofing, and glazing
- E. Excavation / Trenching

Miller Mechanical CONFINED SPACE PLAN

General Procedures for Entering a Confined Space Area

- Have adequate ventilation and lighting in place.
- Always check oxygen, explosive and toxic gas levels with certified testing equipment.
- Wear proper personal protective equipment necessary for task at hand.
- Have safety “attendant” in place at all times.
- Wear full body harness with lifeline attached when necessary for work that generates toxic fumes.
- Take frequent breaks and come up for fresh air.

Emergency Procedures for Injured Person

- Follow normal procedures for injured person and fire (call 911).
- Never enter without testing oxygen, explosive and toxic gas levels.
- Wear proper personal protective equipment.
- The man basket and/or full body harness shall be used for retrieval of the injured worker.
- Never enter the area without assistance and a safety “attendant” in place.
- If you are not sure of the situation, wait for the proper emergency medical personnel.

***Note: Over 60% of workers that die in a confined space area are attempting to rescue other workers.

***Note: Please refer to 1910.146 for specific safety rules and regulations for Confined Space Entry.

Confined Space Entry Plan

Before entering the confined space, make sure that there is adequate ventilation and lighting. Oxygen levels, explosive levels and toxic fume levels shall be tested, before entering and periodically while in the confined space. The proper personal protective equipment (safety glasses, hard hats, hard soled shoes, proper respirator required for task at hand, etc.) shall be worn AT ALL TIMES.

The safety “attendant” shall be in place at all times while work is being performed. If the safety “attendant” should leave his area for any reason, the alternate safety “attendant” shall be in place before work continues.

Anyone required to work in a confined space where welding, waterproofing, grinding of concrete, or any other related activity that generates toxic fumes will be required to wear a full body harness with life line attached AT ALL TIMES.

Before entering the confined space area, the following procedures must be reviewed and understood by each employee.

Atmosphere

The atmosphere must be tested each time before entering a confined space, especially during times when the task at hand creates toxic fumes and/or could cause an oxygen enriched or depleted environment.

- A. The normal oxygen level is approximately 21%. The minimum oxygen level to enter a confined space without a self-contained breathing apparatus is 19.5%. If the oxygen level is greater than 23.5%, the environment is oxygen enriched, and flammables and combustibles burn more violently and can ignite more rapidly.
- B. Only a trained, qualified person shall test the atmosphere for oxygen, explosives and gases. The following gases are typical gases that may be found in a confined space:
 - . Hydrogen sulfide
 - . Carbon monoxide
 - . Methane
 - . Carbon dioxide
- C. Always test the bottom, middle, and top of the confined space area. Some gases are lighter or heavier and settle at different elevations.

Ventilation

Ventilation is the preferred method of eliminating atmospheric hazards over wearing respirators.

- A. Ensure that there is adequate ventilation and lighting.
- B. Maintain ventilation and lighting AT ALL TIMES.
- C. NEVER use pure oxygen to ventilate an atmosphere.
- D. If the oxygen level is below 19.5% rapid fatigue will be experienced.
- E. If the oxygen level is above 23.5%, the atmosphere becomes extremely flammable and combustible. If a fire should develop, everything will burn or ignite rapidly.

Attendant

- A. A safety “attendant” shall be within voice and/or radio contact with all workers inside the confined space AT ALL TIMES. The safety “attendant” should not leave his position for any reason while an employee is in a Confined Space.
- B. The safety “attendant” shall be trained in the job site emergency plans for fire and/or injured person, as well as, have contact with the job site 911 contact person for an emergency.
- C. The “safety attendant” shall not perform any other duties other than to monitor the workers inside the Confined Space.
- D. The safety “attendant” shall have a fire extinguisher on hand at all times.
- E. The safety “attendant” shall be highly distinguishable from the other workers in the area.

Respiratory Protection

- A. The proper respirator must be worn to match the task at hand.
- B. The workers must be properly trained in how to correctly wear and inspect the respirator they are required to wear, prior to use.
- C. Any welding, cutting, brazing, painting, grinding, waterproofing, etc., which may produce toxic gases and/or deplete or enrich the oxygen levels in the confined space require that all workers inside the confined space wear full body harness with a life line attached in the event of an emergency with retrieval necessary. These operations may also create a combustible atmosphere, which will also require the full body harness with the lifeline attached.
- D. If any operation causes an oxygen level of less than 19.5% and/or creates a combustible atmosphere where proper ventilation cannot increase the oxygen to acceptable levels, a self-contained breathing apparatus, may be required to be worn by all workers. If a self-contained breathing apparatus is worn, proper training will be required for all workers, including the safety “attendant”.

Confined Space Entry Team

- A. “Entrant”

All workers / entrants of the confined space shall be thoroughly trained in the Confined Space Plan.
- B. “Attendant”

All workers / entrants shall be constantly monitored by an attendant trained in the Confined Space Plan.
- C. “Entry Supervisor”

Entry Supervisors shall supervise all Confined Space operations. Entry Supervisors shall be trained in the Confined Space Plan.

Miller Mechanical RESPIRATOR POLICY

Introduction

Occasionally a few employees of Miller Mechanical may be asked to enter into work areas where they will need to wear respirators for protection. Respirators protect employees from contaminated dusts, fogs, fumes, mists, gases, smokes, sprays, and vapors. When possible, Miller Mechanical will take appropriate steps to eliminate such hazards by using proper engineering controls, such as enclosures, specialized ventilation, etc. However, when these steps and/or controls are not feasible, employees selected by Miller Mechanical may be required to use respirators.

Only specially trained and designated employees will be permitted to wear respirators. All activity involving employee use of respirators is strictly governed and regulated by this Written Respirator Policy. This Policy was prepared by Miller Mechanical to assist with complying with OSHA regulations 1926.103 & 1910.134.

Purpose of Respirator Use

As noted above, only a few specially trained employees will be asked to wear respirators ... and then only in special situations. Any employees wearing respirators must always follow this Policy. Failure to follow this Policy could lead to termination of employment.

Training and Instruction for Employees

Both supervisors and employees will be trained in the Respirator Policy. These employees will attend individualized training sessions and will be required to review written material, view training videotapes, and/or participate in other training activities as directed by the Company.

The Company will keep records concerning their training. Specifically, Company records will show the names of employees attending the training, the dates and location of the training, and the identity of the trainer.

Training will provide employees an opportunity to:

- Handle the respirator
- Have the respirator properly fitted
- Test its face piece-to-face seal
- Wear the respirator in normal air for a long period to become familiar with it
- Wear the respirator in a test atmosphere

Each employee must receive fitting instructions, which include:

- How to wear the respirator
- How to adjust it
- How to determine proper respirator fit

Employees will also be trained and otherwise informed of the limits of respirators.

Inspection of Respirators

Miller Mechanical will conduct frequent inspections of respirators to make sure that the respirators are properly selected, used, cleaned, and otherwise maintained. Air cylinders must be fully charged according to manufacturer's instructions. Inspections must ensure that all regulators and warning devices are functioning properly, as they were designed.

Respirator inspections shall include the following:

- Check of tightness of all connections and face piece, headbands, valves, connecting tubes and canisters.
- Check of all rubber or elastic parts for pliability or deterioration
- Stretching all rubber or elastic parts with a massaging motion

Cleaning, Disinfection and Storage

All respirators must be regularly cleaned and disinfected. Employees must comply with the manufacturer's recommendations for cleaning and disinfection. Respirators used by more than one employee must be thoroughly cleaned after each use.

While not in use, respirators must be stored in a clean, convenient, and sanitary location. They are not to be left lying around the facility. Respirators must be kept away from dust, sunlight, heat, extreme cold, excessive moisture, and chemicals. Respirators used for emergency situations must be easily accessible at all times and stored in special compartments - not in toolboxes or lockers (unless stored in a carrying case).

All respirators must be routinely inspected during cleaning and disinfection. Any parts found to be worn, broken, or deteriorated must be promptly replaced. Any broken respirator must be tagged accordingly and taken out of service.

Respirators used for emergency situations will be automatically inspected after each use and once each month.

Employer Surveillance and Evaluation

Miller Mechanical will regularly survey the conditions of all work areas and will make an assessment of any employee exposure or stress. This surveillance shall be ongoing. Any evidence of employee exposure or stress shall be reported to upper management and the local health care professional involved with this Policy.

The Company will also conduct regular inspections of respirator procedures and practices. These inspections will help the Company evaluate the effectiveness of this Policy and ensure the safety of all affected employees.

Special Rules - Face Piece Seals

All masks and face pieces must make a proper, airtight seal. Respirators shall not be worn if it is not possible to obtain a proper seal. No beards, sideburns, or anything that projects under the face piece that could compromise a proper seal, are permitted.

Employees who need to use corrective lenses must be extremely careful to make sure that the glasses do not prevent a proper seal. Employees must not wear contact lenses in contaminated atmospheres.

Medical Evaluation of Participating Employees

Employee assigned to tasks requiring use of respirators must first pass a physical examination given by a physician. The examination will ensure that the employee is physically able to perform the related work and use the respirators. Each employee trained to use a respirator will have his or her physical ability and medical status reviewed by the physician at least once each year. These evaluations shall be documented and kept with other records from this Policy, such as training records.

29 CFR 1910.134 Appendix D Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirators use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

- Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
- 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 how much it will protect you.
- Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
- Keep track of your respirator so that you do not mistakenly use someone else's respirator.

Miller Mechanical

LOCK OUT / TAG OUT PROGRAM

General

Lock Out / Tag Out is the preferred method of isolating machines or equipment from energy sources. The following simple procedure is provided for use in both lock out / tag out programs. This procedure may be used when there are limited numbers or types of machines or equipment or there is a single power source. For more complex systems, a more comprehensive procedure will need to be developed, documented, and utilized.

Purpose

This procedure establishes the minimum requirements for the lock out / tag out of energy isolating devices. It shall be used to ensure that the machine or equipment is isolated from all potentially hazardous energy and locked out or tagged out before employees perform any servicing or maintenance activities where the unexpected energization, start-up or release of stored energy could cause injury.

Responsibility

Appropriate employees shall be instructed in the safety significance and importance of the lock out / tag out procedure. Each new or transferred employee who is affected and other employees whose work operations are or may be in the area shall be instructed in the purpose and use of the lock out / tag out procedure.

Preparation for Lock Out or Tag Out

Make a survey to locate and identify all isolating devices to be certain which switch(es), valve(s), or other energy isolating devices apply to the equipment to be locked out or tagged out. More than one energy source (electrical, mechanical, or others) may be involved.

Sequence of Lock Out / Tag Out System Procedure

1. Notify all affected employees that a lock out / tag out system is going to be utilized and the reason therefore. The authorized employee shall know the type and magnitude of energy that the machine or equipment utilizes and shall understand the hazards thereof.
2. If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open toggle switch, etc.).
3. Operate the switch, valve, or other energy isolating device(s) so that the equipment is isolated from its energy source(s). Stored energy, such as that in springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc., must be dissipated or restrained by methods such as repositioning, blocking, bleeding down, etc.
4. Lock out / tag out the energy isolating devices with assigned individual lock(s) and/or tag(s).
5. After ensuring that no personnel are exposed and as a check on having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate.

CAUTION: Return operating control(s) to "neutral" or "off" position after the test.

6. The equipment is now locked out or tagged out.

Restoring the Machines and/or the Equipment to Normal Production Operations

1. After the servicing and/or maintenance is complete and equipment is ready for normal production operations, check the area around the machines or equipment to ensure that no one is exposed.
2. After all tools have been removed from the machine or equipment, guards have been reinstalled, and employees are in the clear, remove all lock out / tag out devices to restore energy to the machine or equipment.

Procedure involving more than one Person

In the preceding steps, if more than one individual is required to lock out / tag out equipment, each shall place his/her own personal lock out device / tag out device on the energy isolating device(s). When an energy isolating device cannot accept multiple locks or tags, a multiple lock out / tag out device (hasp) may be used. If lock out is used, a single lock may be used to lock out the machine or equipment with the key being placed in a lock out box or cabinet, which allows the use of multiple locks to secure it. Each employee will then use his/her own lock to secure the box or cabinet. As each person no longer needs to maintain his or her lock out protection, that person will remove his/her lock from the box or cabinet.

Basic Rules for using Lock Out / Tag Out System Procedures

All equipment shall be locked out or tagged out to protect against accidental or inadvertent operation when such operation could cause injury to personnel. Do not attempt to operate any switch, valve, or other energy isolating device where it is locked out or tagged out.

Miller Mechanical ENVIRONMENTAL PROGRAM

Environmental Program Statement

It is the responsibility of the Contractor to assure installation and maintenance of all erosion control and storm water methods that meet the federal, state and local EPA laws. All hazardous materials such as asbestos, lead base paint, silica, paint, fertilizers, pesticides and insecticides shall be stored and disposed of in such a manner so that no run off will occur to any state waters by what means are necessary.

There will be no on-site dump pits nor will there be any open air burning without permits obtained from the local Fire Marshall, prior to the activity.

ASBESTOS SAFETY POLICY

It is the policy and intent of Miller Mechanical to provide a safe working environment for all Miller Mechanical employees and subcontractor or vendor employees, on each of Miller Mechanical jobsites and to ensure all employees and subcontractors comply with 29 CFR 1926.1101.

Asbestos is not as common of a construction material as it was years ago. Therefore, contact with asbestos containing materials will be generally during renovations of buildings that were built before the year 1975.

The typical areas where asbestos containing materials are found are:

- Plumbing and mechanical pipe insulation
- Floor and ceiling tile
- Floor and ceiling tile glues and adhesives
- Asbestos lined pipes, typically used in underground situations

These areas require special attention and demolition by authorized personnel only. The superintendent of each jobsite should contact Miller Mechanical if asbestos containing materials are detected in a building under construction, demolition, or renovation.

A survey of the jobsite for asbestos containing materials must be performed by an approved testing company prior to any work being performed on the jobsite. This is typically performed by the owner of the property, and a copy of the results, are forwarded to Miller Mechanical

The following is a list of precautions that should be followed when asbestos containing materials are found. An abatement contractor who is fully licensed and insured for asbestos removal shall remove asbestos.

1. A negative pressure environment must be placed around the asbestos containing material to prevent loose particles of asbestos from entering the atmosphere.
2. No sawing, cutting, chipping, grinding, or any other procedure that will cause loose particles of asbestos to enter the atmosphere is permitted.
3. Air purifying respirators, gloves, and disposable coveralls will be required for employees who are required to work with and remove asbestos containing materials.
4. When a quantity of asbestos containing material is to be removed, trash bags that are capable of being sealed airtight and marked **ASBESTOS CONTAINING MATERIAL** must be used. The trash bags must be taken to an approved landfill.
5. Employees are to be provided a hand-washing station and an area to change clothes before entering the work area. An area must be provided for breaks. There shall be **NO SMOKING OR EATING** in work areas.
6. Proper training of employees that are to work with asbestos containing material is to be performed by the superintendent or a competent person before the work begins.
7. Negative pressure fans containing HEPA filters shall be used in large areas to ensure that there are no asbestos particles leaving the containment area.
8. HEPA filters shall be used in all vacuum cleaners that are used to collect loose materials, and the contents of the vacuum cleaners are to be disposed of in sealed and clearly marked trash bags.

LEAD EXPOSURE PROTECTION POLICY

Purpose

The following pages describe the procedures and precautions to be adopted on all jobsites in which employees could receive significant exposures to lead dust or fumes. Lead fumes are generated from welding or cutting on steel, girders, or other metals coated with lead based paint, soldering to join copper pipe, radiator repair, construction activities with fume exposures in aluminum, brass, or bronze foundries, electronics or battery plants, and glass and ceramic facilities. Lead dusts are commonly associated with the disturbance of contaminated ground, sandblasting or abrasive action on surfaces with lead paint, demolition of interior walls painted with lead paint, and decontamination of certain manufacturing operations.

Policy

1. Prior to any demolition or retrofit, all work areas will be surveyed by a competent person to determine existing and predictable lead hazards. It is the responsibility of the overall superintendent of each jobsite to ensure that the survey is conducted.
2. Appropriate material samples will be taken and sent to an approved laboratory to determine the lead content in each material under question. Paints, coatings, and alloys with lead in concentration of 0.4% or more shall be considered a lead source.
3. Where a potential exposure to lead dust exists, spray-misting equipment shall be used for dust control.
4. In an enclosed area, during welding or cutting on surfaces with lead containing paints, local exhaust ventilation will be used to remove the fumes. The ventilation shall be evaluated periodically to maintain its effectiveness. If local exhaust is not possible, then the paint will be stripped away from the surface to be welded or cut to a distance of 12" on each side of the cut or welding point. Proper respiratory protection and other PPE must be provided to the employee doing the scraping.
5. In an open-air setting, for welding and cutting on lead-contaminated surfaces, respiratory protection is mandatory with respirators approved by NIOSH.
6. Each employee and subcontractor on a Miller Mechanical project must comply with the 29 CFR Part 1926.62.

Initial Determination

1. For potential lead exposures that cannot be eliminated through engineering means, personal air samples shall be conducted to determine the extent of exposure. The samples shall be for a complete shift and represent each potentially exposed job classification in each work area for the shift with the highest potential exposure. Until sample results are available, workers in the immediate area shall be required to wear respirators according to each established exposure or activity below:

| Half mask air purifying respirators | Powered air purifying respirators | Supplied air respirators |
|--------------------------------------|-----------------------------------|--------------------------|
| <i>Moderate</i> | <i>High</i> | <i>Extreme</i> |
| Manual demolition structures / walls | Lead in mortar: burning | Abrasive blasting |
| Manual scraping | Lead in paint: tool cleaning | Welding |
| Manual sanding | Cleanup spent abrasives | Cutting |
| Heat gun applications | Abrasive blasting enclosure: | Torch burning |
| Power tool clean with dust collector | | |
| Spray painting | | |

2. Until sampling results are available, employees shall be provided with appropriate protective clothing, suitable change areas, hand-washing facilities, and blood sampling for analysis of blood lead and zinc protoporphyrin (ZPP) levels.

Negative Results

1. If the initial personnel samples on each exposed job category show that the airborne lead concentrations are below 30 micrograms per cubic meter (Ug/M3), the result is negative. A written record must be documented that shows:
 - a. Date
 - b. Location
 - c. Job activity
 - d. Name
 - e. Social security number
 - f. The name of the person who made this determination should also be included.
 - g. No further testing is required unless the nature of the activity changes.
2. All surfaces shall be kept free of accumulations of lead dust or fumes. Vacuums with HEPA filters shall be used for cleanup. Compressed air cleaning is prohibited.
3. Hand washing facilities will be provided. Where showers are not available, employees will be required to wash their hands and face at the end of a work shift, and before taking breaks, eating, smoking, etc. If disposable coveralls and foot protectors are provided, they will be disposed of in approved containers before the employee leaves the work area.

Action Level

1. Within five days, each employee will be notified in writing of the test results that represent that employee's exposure. Records of air monitoring and medical evaluation tests shall be kept for five years.
2. If any samples show job categories above the 30 ug/m³ action level but below the 50 ug/m³ permissible exposure limit (PEL), follow-up samples must be taken at least every six months on each employee classification which has a potential lead exposure.
3. Initial medical examinations, including lead and zinc ZPP blood level tests, are required for anyone who must work in an area or activity in which the airborne concentration of lead exceeds the 30 ug/m³ action limit. If the test results show blood lead concentrations greater than 40 ug/dL, additional blood tests shall be conducted every two months. For employees with exposures above the action level for any thirty days in a twelve month period, tests for lead and ZPP levels in the blood will also be conducted at two month intervals. Samples will be taken under the direction of a licensed physician and analyzed by an approved laboratory. Follow-up blood tests must be conducted within two weeks of notification for employees with blood concentrations greater than 50 ug/dL, and the employee will be removed from any work places with potential lead exposures.
4. Training in addition to that described in Section 4 under "Negative Results" will be provided and will include:
 - a. The contents of the lead standard
 - b. Specific nature of operations that could lead to lead overexposures
 - c. Proper use of respirators
 - d. Medical surveillance program Engineering controls
 - e. Lead exposure control program
 - f. Employees' right of access to records
 - g. Suitable work practices

Exceeding the Permissible Exposure Limit (PEL)

1. If initial air test results show that employee exposure concentrations exceed the PEL, a written notice shall be provided to the employee advising him or her that the exposure was above the PEL and giving a description of the corrective action to be taken to bring concentrations within acceptable limits. Additional air tests must be conducted on at least a quarterly basis.
2. Engineering and work practice controls will be used to bring employee exposure concentrations below the PEL. When mechanical ventilation is used, the performance of the system shall be evaluated and documented on a daily basis.
3. For locations or activities for which respiratory protection is mandatory, the use of respirators will conform to the company's respiratory protection program, including the provisions for selection, medical evaluation, fit testing, maintenance, and training.
4. Where employees are subject to airborne lead concentrations in excess of the PEL or where they may come into contact with lead compounds that could cause skin or eye irritation, employees will be required to wear protective clothing such as coveralls, hats, protective footwear, and/or face shields or goggles. Protective clothing shall be cleaned and provided on at least a weekly basis.
5. Food, beverage, and tobacco products are not allowed in areas where airborne lead exposures exceed the PEL. Clean change areas are to be provided, including separate lockers for work clothing and street clothing, shower facilities, and lead free eating facilities. Employees are required to wash both hands and face prior to eating, drinking, smoking, or applying cosmetics. No employees from high lead concentration areas may enter an eating facility unless, surface lead dust has been removed by vacuuming or other cleaning method that collects lead dust. Adequate hand-washing facilities will be provided.
6. The requirements for blood tests and ZPP are the same as in under "Action Level".
7. The training requirements are the same as those in under "Action Level".
8. Warning signs must be posted in areas where the PEL is being exceeded. The signs will read:

**WARNING!
LEAD WORK AREA
POISON
NO SMOKING OR EATING
NO ADMITTANCE WITHOUT AUTHORIZATION**

9. Regulated areas will be established and roped off. Non-essential workers will be routed around these areas.

Exposure Control

1. The following controls will be used to keep airborne lead concentrations below the action level of 30 ug/m³:

| <u>Activity</u> | <u>Control</u> |
|--|--|
| Soft demolition / interior walls (lead based paint) | Mist drywall prior to sawing or breaking |
| Area cleanup lead contaminated dust | HEPA vacuum |
| Welding or cutting – coatings with lead (enclosed space) | Local exhaust ventilation or clean metal for four inches |
| Welding or cutting – coatings with lead (open air) | Respiratory protection or clean metal for four inches |
| Abrasive blasting / lead coatings | Supplied air respirators |

| | |
|-------------------------------|--------------------------------|
| Spray painting / lead content | Use paint with no lead content |
|-------------------------------|--------------------------------|

2. For each activity in which lead is emitted, a description will be provided including:
 - a. The activity
 - b. The nature of the lead source
 - c. Equipment in use
 - d. Engineering and other controls
 - e. Crew size
 - f. Work practices and procedures
 - g. Maintenance practices
 - h. Any engineering plans or studies used to select the controls should also be documented.
3. Frequent and regular inspections will be provided at the jobsites by a competent person.
4. Copies of all air monitoring tests, which identify airborne lead concentrations will be attached to this program.
5. A detailed schedule of equipment procurement, construction contracts, and other plans for implementation of the protection program will also be attached.

HEXAVALENT CHROMIUM SAFETY POLICY

Policy Statement

Hexavalent chromium [Cr(VI)] compounds are widely used in the chemical industry as ingredients and catalysts in pigments, metal plating and chemical synthesis. Hexa-chrom can also be found in the construction industry through welding on stainless steel or on hexachrom painted surfaces. The major health effects include lung cancer, nasal septum and skin ulcerations and contact dermatitis. The purpose of this policy is to prevent employee exposure to hexavalent chromium compounds during construction activities. Each contractor working on a Miller Mechanical project must comply with 29 CFR Part 1926, Construction Industry Regulations, Subpart Z – Section 1126, Chromium (VI), in addition to the following guidelines.

Procedures

1. Permissible Exposure Limit (PEL)

- a) Since this construction activity is limited to specialty work, Miller Mechanical will direct the Subcontractor to provide specific Job Hazard Analysis (JHA's) and Pre-Task Planning (PTP) meetings to address potential exposure.
- b) The Employer must ensure that no employee is exposed to an airborne concentration Cr(VI) in excess of 5 micrograms per cubic meter of air (5 ug/m³) calculated as an 8-hour time-weighted average (TWA).
- c) Engineering controls will be the preferred method to achieve the Permissible Exposure Limit (PEL).

2. Exposure Determination

- a) The subcontractor must determine the 8-hour TWA exposure for each employee exposed to Cr(VI). This may be accomplished using two options; scheduled or performance-oriented monitoring.
- b) Scheduled Monitoring
 - The subcontractor must perform initial monitoring to determine the 8hour TWA for each employee on the basis of a sufficient number of personal breathing zone samples.
 - If the subcontractor does representative sampling, it must be conducted on the employee(s) expected to receive the highest exposure.
 - If the monitoring indicates that employee exposures are below the action level (1/2 the PEL or 2.5 ug/m³) and this is confirmed by another monitoring seven days later the employer may discontinue monitoring.
 - If the monitoring indicates that employee exposures are at or above the action level, the subcontractor must perform periodic monitoring at least every six months or above the PEL must repeat every three months.
- c) Performance Option
 - The employer shall determine a TWA exposure for each employee based on any combination of air monitoring data or objective data sufficient to characterize employee exposure.

3. Methods of Compliance

- As stated previously, engineering and work practice controls must be used to reduce and maintain employee exposure to Cr(VI) to or below the PEL.
- If feasible engineering and work practice controls are insufficient to reduce exposure below the PEL, then respiratory protection must be used.
- The subcontractor will not be allowed to rotate employees to different jobs to achieve compliance with the PEL.

4. Respiratory Protection

- a) Respiratory protection use must comply with Miller Mechanical Respiratory Protection Program.
- b) The subcontractor must provide respiratory protection in the following circumstances:
 - Periods necessary to install or implement feasible engineering or work practice controls.
 - Work operations where an employer has implemented all feasible engineering and work practice controls and such controls are not sufficient to reduce the PEL.
 - Emergencies

5. Protective Work Clothing and Equipment

- Where there may be a hazard to the skin or eyes from exposure to Cr(VI) the subcontractor must provide, at no cost, protective clothing or equipment to the employee.
- The subcontractor must ensure that the employees remove all clothing and equipment that may be contaminated with Cr(VI) when the work is complete or at the end of the shift.
- The subcontractor must ensure that chromium-contaminated clothing is not removed from the workplace.
- When contaminated protective clothing or equipment is removed for laundering or cleaning, the subcontractor must ensure that it is stored and transported in impermeable bags or containers.
- The subcontractor must inform any person who launders or cleans clothing or equipment of the potential effects of exposure to Cr(VI) and that the clothing or equipment should be laundered or cleaned in a manner that minimizes skin or eye contact.

6. Hygiene Areas and Practices

- Where protective clothing and equipment is required, the subcontractor must provide change rooms that comply with 29 CFR 1926.51.
- Where skin contact may occur, the subcontractor must provide hand washing facilities that comply with 29 CFR 1926.51

7. Medical Surveillance

The subcontractor must make medical surveillance available, at no cost, to employees who meet the following criteria:

- Those who are or may be occupationally exposed to Cr(VI) at or above the action level for 30 or more days a year.
- Those who are experiencing signs or symptoms of adverse health effects associated with Cr(VI) exposure.
- Those exposed in an emergency.

8. Communication of Chromium

- Must follow the same communication of hazardous chemicals highlighted in Miller Mechanical Hazard Communication Program.

9. Recordkeeping

a) The subcontractor must maintain the following data records;

- Air monitoring
- Historical monitoring
- Objective data
- Medical surveillance

Roles and Responsibilities

Miller Mechanical management conducts inspections of the workplace for compliance with this policy.

1. Discuss policy applications during project orientations and pre-planning meetings with subcontractors.
2. Conduct pre-planning meetings and require the use of Job Hazard Analysis (JHA) and Pre-Task Planning (PTP) meetings.

Subcontractor Management will comply with and furnish materials necessary to meet the requirements of Miller Mechanical policy.

- Attend and participate in any and all project orientations, pre-planning meetings, JHA discussions and PTP meetings.
- Subcontractors' employees attend and participate in any and all project orientations, pre-planning meetings, JHA discussions and PTP meetings.
- Subcontractors' employees will comply with this policy.

SILICA SAFETY POLICY

Policy Statement

Exposure to silica can lead to silicosis, a serious and sometimes fatal respiratory disease. Silicosis develops from being exposed to and breathing in silica dust. Excessive amounts of silica dust may be generated during activities such as: sandblasting, rock drilling, roof bolting, foundry work, stonecutting, drilling, quarrying, brick / block / concrete cutting, gunite operations, lead-based paint encapsulate applications, asphalt paving, cement products manufacturing, demolition operations, hammering, and chipping and sweeping concrete or masonry.

The following policy is designed to protect employees who may come into contact with silica during the course of their work.

This policy is designed for Miller Mechanical Construction Employees. Subcontractors must be required to submit and have approved by Miller Mechanical, their company's Silica Exposure Prevention Program prior to start of work.

Procedures

In order to determine whether a product contains silica, the SDS must be obtained and evaluated. In the event silica is present in products on-site, the following safe working procedures shall be followed to eliminate or control silica dust exposure:

1. Always wet the dry materials and surfaces before cutting, chipping, grinding, sanding, sweeping or cleaning. This engineering control shall be used to the greatest extent feasible, so that airborne concentrations of silica are minimized.
2. Engineering controls must be considered as a primary means to eliminate the hazard, whenever feasible.
3. Industrial hygiene exposure monitoring must be conducted in order to confirm that the engineering and administrative controls in place are effective and whether personal protective equipment (PPE) is or is not required.
4. If PPE is required, refer to Miller Mechanical Respiratory Protection Program for specific guidelines.
5. After working with products that contain silica, each individual will be required to thoroughly wash their hands before eating, drinking or smoking. Eating, drinking or smoking near silica or in a silica-regulated areas is strictly prohibited.
6. The Project Safety Orientation should include information on potential areas for exposure and the hazards of silica exposure.
7. Use power tools with built-in high-efficient particulate air (HEPA) dust extraction units to capture the dust before it is released into the exhausted air.
8. Miller Mechanical will not allow the use of any compound used for abrasive cleaning that contains more than 1% silica. Employee sampling must be conducted to verify that concentrations released from the media being finished does not exceed allowable OSHA PEL's. For abrasive blasting, replace silica sand with less toxic materials. The National Institute for Occupational Safety and Health highly discourages the use of sand or any abrasive with more than 1% crystalline silica in it. As an alternative, garnet, slag and steel grit and shot may be suitable substitutes.

All subcontractors are to supply any exposure monitoring, testing, or engineering information regarding silica exposure in their operations prior to beginning work. An example may be the masonry contractor using brick / block saws and associated experience data that the subcontractor has obtained.

NUISANCE DUST POLICY

Nuisance dust is generally created by normal construction activities and should be controlled or contained within the construction area.

- When working within an office / public environment, special precautions need to be taken to protect the quality of air by all possible means. Some examples are increasing the outside air flow to the Air Handlers, adding additional filters on return air diffusers, creating negative pressure environments, using HEPA vacuums and negative pressure fans to filter the environment.
- When working with cleaners and solvents needed for cleanup, always read all SDS before using in a controlled air environment, which could affect surrounding personnel.
- Always contact the employer of surrounding employees with a schedule of work activities and coordinate any special activities that may affect the quality of air near them.
- Always ask surrounding employers if any of their employees have medical conditions, which may be triggered by nuisance dust, fumes, mist, etc. from construction activity. These employees need to be relocated as far away from construction activities as possible. Asthma, allergies or bronchitis type medical conditions may be affected with even the smallest amount of dust or fumes entered into the environment.
- Always contact Miller Mechanical when nuisance dust conditions may occur around the general public, prior to beginning construction.
- Workers required to work around nuisance dust environments may be given NIOSH HEPA 95+ respirators or required to wear proper respirators per company policy and respirator program.

Miller Mechanical

VEHICLE SAFETY POLICY

Employees of Miller Mechanical are required to adhere to the following guidelines when operating any vehicle leased, rented, borrowed or owned by Miller Mechanical or when operating a personal vehicle for company business.

- All drivers will be held accountable for safe operation and maintenance of company vehicles and for the safe operation of a personal vehicle for company business.
- Only approved drivers may operate company vehicles. Drivers of personal vehicles on company business must also be approved by Miller Mechanical
- All drivers must submit a copy of their driver's license to the Miller Mechanical so that a driver's Motor Vehicle Record may be reviewed for motor vehicle history.
- Motor vehicle records will be reviewed 2-times each year. If at this time, there are excessive violations or accidents found, driving privileges of company vehicles may be revoked for a period of time to be determined by Miller Mechanical.
- The driver of a company vehicle must maintain a maintenance logbook. The logbook should include the date, work performed on the vehicle, and the mileage shown on the odometer at the time the work was performed. This includes oil and filter changes, tire rotations / replacements, brake replacement, body and engine work etc.
- Any vehicle repair or maintenance expense in excess of \$500.00 for any single expenditure or in the aggregate for any quarter must be approved in advance by your supervisor.
- Only qualified company vehicle mechanics or approved service facilities are permitted to perform maintenance on company vehicles.
- The Safety Officer of Miller Mechanical will perform a vehicle inspection twice per year. This inspection will include a review of the maintenance logbook and a visual inspection of the vehicle.
- A Supervisor's Report of Accident for Vehicles must be completed and sent to the main office whenever an accident has occurred involving any company vehicle. This report is to be completed by the supervisor responsible for the vehicle no matter who is at fault. A copy of the police report should be attached, along with the estimates from the repair shop.
- Company vehicles driven for business use ONLY. No personal use of company vehicles unless authorized by CEO.
- Operating a company vehicle while under the influence of alcohol, drugs, etc. is prohibited and shall result in immediate termination of employment.
- Employees who use the auto allowance and/or mileage reimbursement in lieu of a company provided vehicle shall provide proof of auto insurance and limits for review and approval by Miller Mechanical.
- Employees who are charged with moving traffic violations while driving will be solely responsible for all penalties that result from such actions.
- Failure to follow any of the policies listed above may be grounds for termination of driving privileges or dismissal from employment.

Miller Mechanical

CELL PHONE AND ELECTRONIC DEVICE POLICY

Policy Statement

All employees of Miller Mechanical are required to adhere to the following guidelines while using a personal mobile phone or company mobile phone while at work or conducting any company business. For purposes of this policy, the term "cell phone" or "mobile phone" is defined as any handheld electronic device with the ability to receive and/or transmit voice, text or data messages without a cable connection.

Purpose

The purpose of this policy is to provide guidelines for the use of cell phones or data devices for company business. In addition, this policy is designed to provide guidance to employees regarding the proper use of cellular devices (phones, PDA's, etc.) for voice or data communication; to ensure that the use of cellular technology for company business is correctly authorized and appropriate.

Management Responsibility

- Supervisors are responsible for educating subordinates about appropriate cellular telephone procedures and monitoring their usage.
- The Manager will review this policy with any employee that is issued a cell phone.
- Management will review monthly cellular telephone bills of responsible employees to determine appropriate usage.
- Management will ensure employees are aware of the importance of protecting confidential and sensitive information held while using a cell phone.

Employee Responsibility

- Employees assigned company supplied cell phones are responsible for compliance with all regulations and policies.
- Employees using company cell phones are responsible for securing them. Losses shall be reported immediately to the appropriate Supervisor.
- Employees may be held liable for lost, stolen, or damaged cell phone equipment or accessories.
- Employees will not store any customer or confidential information on their cell phones.
- Non-exempt employees must have prior approval before using their cell phones for wireless handheld devices for business purposes after regularly schedules work hours.
- Misuse or abuse of this policy may result in disciplinary action, up to and including dismissal from service.

General Use at Work

While at work, employees should limit mobile phone use to company business. Employees should restrict personal calls, regardless of the phone being used to while at lunch or while on scheduled breaks. Excessive personal phone calls are counterproductive and distracting to other workers.

Construction Sites

Mobile phones shall not be used while on construction sites if the use of the mobile phone creates an unsafe condition. Examples include but are not limited to:

- Working from heights
- Working near heavy equipment
- Working in roadways

While Driving

It is illegal in most states and against Miller Mechanical policy to use a hand held mobile phone while driving if you are a novice driver, a bus driver or if you are driving a vehicle which requires a CDL.

It is illegal in most states and against Miller Mechanical policy to text while driving ANY vehicle.

It is against Federal Law and against Miller Mechanical policy to use any mobile or cellular device while driving a vehicle which requires a CDL unless the device is 100% hand free.

Safe Use Guidelines

Employees must follow the guidelines outlined below to insure the safe use of all cell phone equipment.

- Employees should refrain from using of cell phones when driving.
- Allow incoming calls to go to voice mail whenever possible.
- Check voice mail and return calls only when the vehicle is off the road.
- Do not text message while driving a vehicle.
- Pull off the road to a safe place such as a parking lot to make necessary calls or use computer.
- Always dial the phone when the vehicle is not moving.
- Suspend cell phone usage during hazardous driving situations, such as heavy traffic or bad weather.
- Never take notes while driving.
- Keep any necessary conversations as brief as possible while on the road.
- Use speed dialing or voice dialing as much as possible.
- Use the phone with hands-free equipment.
- Never look up phone number or other information while driving.
- Refrain from conducting stressful conversations while driving.
- Employees are prohibited from texting while operating a vehicle on company business.
- Safe driving is always important, and must take priority over cell phone conversations.
- Employees who are charged with traffic violations resulting from the use of their cell phones while driving will be solely responsible for all penalties that result from such actions.

Other Restrictions

Employees must adhere to all federal, state, or local rules and regulations regarding the use of cell phones while driving. Accordingly, employees must not use cell phones if such conduct is prohibited by federal, state, or local laws, regulations or other ordinances.

The use of personal cell phones while at work may present a hazard or distraction to the user and or coworkers. This policy is meant to ensure that cell phone use while at work is both safe and does not disrupt business operations. Unless otherwise authorized, employees may only use personal cell phones for emergency purposes, while at work.



MILLER MECHANICAL
Contractors & Engineers, LLC

November 1, 2004

To: All employees

The illegal use of drugs and the abuse of alcohol are problems that invade the workplace, endangering the health and safety of the abusers and those who work around them. Miller Mechanical Contractors and Engineers, LLC is committed to creating and maintaining a workplace free of substance abuse without jeopardizing valued employees' job security.

To address this problem, MMC&E has developed a policy regarding the illegal use of drugs and the abuse of alcohol that we believe best serves the interests of all employees. Our policy formally and clearly states that the illegal use of drugs or abuse of alcohol or prescription drugs will not be tolerated. As a means of maintaining our policy, we are implementing pre-employment and active employee drug testing. This testing will begin 60 days from the date of this notice. This policy was designed with two basic objectives in mind: (1) employees deserve a work environment that is free from the effects of illegal drug use or alcohol abuse and the problems associated with such, and (2) MMC&E has a responsibility to maintain a healthy and safe workplace.

To assist us in providing a safe and healthy workplace, we maintain a resources file of information of various means of employee assistance in our community, including but not limited to drug and alcohol abuse programs. Employees are encouraged to use this resource file, which is located in the Human Resource Department. In addition, as requested, we will distribute this information to employees for their confidential use.

An employee whose conduct violates MMC&E's Substance Abuse Policy will be disciplined up to and including termination.

I believe it is important that we all work together to make MMC&E a drug-free workplace and a safe, rewarding place to work.

Sincerely,

Joseph E. (Eddie) Miller
President



MILLER MECHANICAL
Contractors & Engineers, LLC

MILLER MECHANICAL CONTRACTORS AND ENGINEERS, LLC

DRUG FREE WORKPLACE PROGRAM

Table of Contents

- I. Policy Statement
 - II. Program Goals
 - III. Program Responsibilities
 - IV. Definitions
 - V. Procedures
 - VI. Employee consent form
 - VII. Employee Assistance Resource Information
 - VIII. Confidentiality Statement
-

MILLER MECHANICAL CONTRACTORS & ENGINEERS, LLC

DRUG FREE WORKPLACE PROGRAM

I. POLICY STATEMENT

Miller Mechanical Contractors and Engineers, LLC (MMC&E) encourages a drug free workplace. It is our desire to minimize the opportunity for abuse, on the job of controlled substances, illegal drugs and over the counter medications that may affect the work we perform or the safety of our employees.

The MMC&E drug-free workplace program is certified by the Georgia Workers' Compensation Board in accordance with Title 34, Chapter 9, Article 11 of the Official Code of Georgia Annotated.

This Drug Free Workplace program outlines MMC&E's policy for use and possession of drugs on company property while on the job. Clear communication of and strict adherence to the program's guidelines and procedures are essential.

II. PROGRAM GOALS

The primary goal of this program is to maintain a safe workplace by maintaining a commitment to a drug free work environment.

MMC&E in general will adhere to the Department of Transportation; Federal Motor Carrier Safety Regulations regarding drug and alcohol use by/for commercial drivers. This program is designed to conform closely to these standards. MMC&E may at its sole discretion, implement components to its program that exceeds DOT regulations. (See DOT Regulations in 49CFR parts 40)

All employees must follow the requirements of this program. Violations of this program may result in disciplinary action up to and including termination.

III. PROGRAM RESPONSIBILITIES

Everyone shares in the responsibility to make MMC&E a safe and drug free workplace. To avoid confusion or misunderstanding, specific program responsibilities are outlined as follows:

A. Employees

Employees are required to:

1. Read, understand and follow the requirements contained in this program;
2. Participate in organization-sponsored activities or programs designed to minimize the likelihood of use of controlled substances while employed or engaged in activities on behalf of MMC&E.
3. Submit to periodic and post accident drug/alcohol testing.

4. Sign the drug/alcohol testing consent form and acknowledgement of receipt and understanding of this program.

B. Managers

Managers are responsible:

1. Read, understand and enforce the requirements of this program.
2. Demonstrate commitment to the program through participation in company driven initiatives.
3. Educate employees on the provisions of this plan.

IV. DEFINITIONS

Alcohol:

- Any alcohol product or substance including beer, wine, liquors and medications containing alcohol in concentrations capable of producing intoxication or which may inhibit reaction time, response time, or cause drowsiness to a degree which creates an unsafe condition when performing a safety sensitive function.

Applicant:

- An applicant who has participated in the interview process and is/has participated in a pre-employment drug screening.

Controlled substances:

- Any drug requiring a physician prescription or is defined as an illegal controlled substance by federal law enforcement. An illegal controlled substance includes: Cannabis, cocaine, crack, PCP, methamphetamines, ecstasy, opiates, LSD, peyote, or other illegally obtained medication requiring a physician prescription for which the user is not the patient or intended recipient of the drug.

Drug Screening Thresholds:

- The following tables detail the laboratory testing limits for specific illegal drugs.
- Applicants who test at or above the levels for **(Cannabis only, THC)** in the underlying tables are banned from employment with MMC&E in any capacity, for a minimum of 30 days. Applicants may re-test at anytime after 30 days at their own expense. Applicants who re-test at or above the thresholds in the tables below are banned from employment with MMC&E in any capacity for a minimum of 1 year. These applicants may reapply after one year and resubmit to drug testing at their own expense.
- Applicants who test at or above the thresholds in the tables below for any substance other than Cannabis/marijuana are banned from employment with MMC&E in any capacity for a minimum of 1 year. These applicants may reapply after one year and resubmit to drug testing at their own expense.

| | INITIAL TEST CUTOFF LEVELS (ng/ml) |
|-----------------------|---------------------------------------|
| Marijuana metabolites | 50 |
| Cocaine metabolites | 300 |
| Opiate metabolites | 2000 |
| Phencyclidine | 25 |
| Amphetamines | 1000 |
| Ecstasy | trace |

- Confirmatory tests: All positive tests will be confirmed as positive using gas chromatography/mass spectrometry. (GC/MS) procedures. The confirmatory test cutoff levels are:

| | Confirmatory test cutoff levels (ng/ml) |
|--|---|
| Marijuana metabolites | 15 |
| Cocaine metabolites (Benzoylecgonine) | 150 |
| Opiates: Morphine, Codeine | 2000 |
| | 2000 |
| 6-Acetylmorphine (test for 6-AM when morphine concentration exceeds 2,000) | 10 |

| ng/ml) | |
|--|-----|
| Phencyclidine | 25 |
| Amphetamines: | 500 |
| Amphetamine | 500 |
| Methamphetamine (Specimen must also contain amphetamine at a concentration greater than or equal to 200 ng/ml) | |

Employees:

- Any person, who is employed by MMC&E in a capacity other than contractually.

Medical Review Officer (MRO):

- An independent third party medical professional, competent and knowledgeable of the procedures and protocols for drug sample collection, analysis, and results reporting. The MRO monitors and administers the results of positive tests for candidates and employees.

Over the Counter Medications:

- Any non-prescription medication including holistic medications that may alter alertness, or reaction times of individuals.

Pre-employment testing:

- Initial drug testing protocol for candidates. All pre-employment tests shall conform to the DOT protocol for pre-employment testing. (See above thresholds.)

Post Accident testing:

- All employees, regardless of employment status or position must submit to a post accident drug test whenever he/she is involved in a work related accident event. All post accident drug tests will include at a minimum, the screening protocols outlined by the DOT for post accident drug testing.
- Employees engaged in an auto accident that involves any of the following events are also required to submit to a post accident alcohol test.
 - Fatality
 - Serious injuring requiring ambulatory transport from the scene
 - Tow away of any vehicle because its operation is not possible
 - Receipt of citation for serious moving violation

Behavioral observations may include:

- The odor of alcohol on the employee's breath;
- Erratic behavior;
- Unsteady gait, etc.

An employee reporting to work visibly impaired will be deemed unable to properly perform required duties and will not be allowed to work. If possible, the employee's supervisor will first seek another supervisor's opinion to confirm the employee's status. Next the supervisor will consult privately with the employee to determine the cause of the observation, including whether substance abuse has occurred. If, in the opinion of the supervisor, the employee is considered impaired, the employee will be taken or sent to a drug screening facility (accompanied by the supervisor or another employee if

necessary). A drug test will be given. An employee who appears to be impaired will not be allowed to drive

Reasonable Suspicion Testing:

- Management may request employee(s) to submit to drug testing whenever management has reasonable suspicion that drug use is occurring at the workplace. Reasonable suspicion must meet the definitions as defined by the Dept. of Transportation.

Safety Sensitive Function:

- Performance of a job function which results in exposure to the general public or which may expose others to risk of harm; i.e. operation of a motor vehicle, operation of mechanized construction equipment including power tools, sawzalls, open flame soldering or brazing torches, bobcats, forklifts, high-lifts or other powered equipment.

Secured Company Collection Site:

- Samples collected at company locations must be done so in a private and secure manner including:
 - Secure site so foreign substances or water may not contaminate samples.
 - Secure from intrusion by outsiders during the collection process.

Sub-Contractors:

- Sub-contractors with signed agreements and proof of insurance including workers compensation, general liability and auto liability are not considered MMC&E employees. Sub-contractors may be required to conform to the requirements of this program as a condition of their contractual agreement with MMC&E.

V. Procedures

Applicant Procedures:

Applicants will be required to submit voluntarily to a urinalysis test at a laboratory chosen by MMC&E, and by signing a consent agreement will release MMC&E from liability.

All applicants will undergo drug testing using DOT approved sample collection procedures prior to reporting for duty. These procedures include:

- Sample collection at a secure site (testing laboratory or medical office, sample collection at a secured company location with collection performed by a qualified individual)
- Maintenance of chain of custody documentation of collected samples

Applicants who have undergone sample collection may report to work on a conditional basis pending results of lab analysis. Results of sampling must be returned to MMC&E within 3 working days or the employee must be suspended without pay until results are returned. The drug testing functions, which may be performed while the applicant is fulfilling a conditional work assignment, are:

- Analysis performed by a certified testing laboratory
- Positive initial tests confirmed by GC/MS
- Confirmation of positive results to the applicant by the company's medical review officer

Employee Procedures:

All employees who undergo drug testing for any reason including post accident testing will undergo drug testing at an approved laboratory collection site which shall use DOT approved sample collection procedures. These procedures include:

- Sample collection at a secure site (testing laboratory or medical office, sample collection at a secured company location with collection performed by a qualified individual)
- Maintenance of chain of custody documentation of collected samples

At Management's discretion employees who have undergone testing and are awaiting the results of the analysis may be allowed to report for duty, but may not return to any function defined as a safety sensitive function (see above) until such time as the results are received by the company and are deemed to be below thresholds as defined in the table above.

- Analysis performed by a certified testing laboratory
- Positive initial tests confirmed by GC/MS
- Confirmation of positive results to the prospective employee by the company's medical review officer.

Employees who have undergone testing and receive a confirmed positive result for any substance in the tables above will be terminated.

It is a violation of company policy for any employee to use prescription drugs illegally, i.e., to use prescription that have not been legally obtained or in a manner or for a purpose other than as prescribed. (However, nothing in this policy precludes the appropriate use of legally prescribed medications.)

Employees with CDLs who, post accident, test positive for alcohol at concentrations meeting or exceeding 0.02 but less than 0.04 shall be suspended from driving subject to investigation and shall be subject to disciplinary action up to and including termination.

Employees with CDLs who, post accident, test positive for alcohol at concentrations meeting or exceeding 0.04 will be terminated.

Any employees who, post accident, tests positive for alcohol at concentrations meeting or exceeding 0.04 shall be suspended from driving subject to investigation and shall be subject to disciplinary action up to and including termination.

Employees who, post accident, test positive for alcohol at concentrations exceeding 0.08 shall be terminated.

VI. MILLER MECHANICAL CONTRACTORS AND ENGINEERS, LLC

Drug and Alcohol Testing Consent and Acknowledgement of Company Policy and Program

I _____ have read and understand MMC&Es policy and program for achieving and maintaining a drug free workplace.

I consent to submit to drug and/or alcohol testing at my employer's expense, at the dates and times requested by my employer. I acknowledge that giving this consent includes consent for the following testing purpose:

- Periodic
- Post accident
- Position change (transfer or job change)
- Reasonable suspicion
- Random

I understand that my refusal to sign this consent or to adhere to the company's policies, or submit to testing may result in disciplinary action up to and including termination.

Employee Signature _____

Date _____

Witness _____

VII. Employee Assistance Resource Information

The company offers resource information on various means of employee assistance in our community, including but not limited to drug and alcohol abuse programs. Employees are encouraged to use this resource file, which is located in the Human Resource office. In addition, we will distribute this information to employees (upon request) for their confidential use.

VI. MILLER MECHANICAL CONTRACTORS AND ENGINEERS, LLC

Drug and Alcohol Testing Consent and Acknowledgement of Company Policy and Program

I _____ have read and understand MMC&Es policy and program for achieving and maintaining a drug free workplace.

I consent to submit to drug and/or alcohol testing at my employer's expense, at the dates and times requested by my employer. I acknowledge that giving this consent includes consent for the following testing purpose:

- Periodic
- Post accident
- Position change (transfer or job change)
- Reasonable suspicion
- Random

I understand that my refusal to sign this consent or to adhere to the company's policies, or submit to testing may result in disciplinary action up to and including termination.

Employee Signature _____

Date _____

Witness _____

FORKLIFT SAFETY

I. POLICY STATEMENT

Ensure all powered industrial trucks are maintained and operated in such a manner to minimize opportunity of personal injury and/or damage to property or materials.

II. PROGRAM GOALS

- Only authorized and certified employees are allowed to operate powered industrial trucks.
- Prevent injury or loss of life.
- Prevent damage to materials and/or property and equipment.

TAB12

III. PROGRAM RESPONSIBILITIES

Maintenance of this program is the responsibility of MMCE, Safety and Risk Management.

The jobsite superintendents are responsible for the successful implementation and maintenance of this program at all jobsites for which he/she is responsible.

- Safety representative will certify all ITO's.
- Safety representative will ensure all ITO's are re-certified at least every three years or as need arises.
- Supervisor will ensure only certified employees operate powered industrial trucks (PIT).
- Supervisor will ensure all PIT are inspected and maintained.
- Supervisor will tag out damaged PIT for repair.
- Employees will only operate PIT for which they are certified.
- Certified operators must perform daily pre-use inspection.
- Certified operators must report any damaged or inoperable safety equipment.

I. PROGRAM RESPONSIBILITIES - (Continued)

- CO must follow all safety rules and procedures.
- Post accident drug testing is required.

IV. DEFINITIONS

- **Certified operator** – Employee who has been trained through CFE 1910.178 PIT training.
- **Industrial truck** – Any motorized/powered equipment used to lift or transport materials.
- **PIT** - Powered Industrial Truck
- **ITO** – Industrial Truck Operators

TAB12

V. PROCEDURES

- Operator will document pre use checklist. (Completed daily checklist to be kept on file for one year).
- Operator will utilize seat belts at all times when operating PIT.
- Before use operator will ensure all protection and back alarm are operational and fire extinguisher present.
- Operator will not lift loads greater than PIT's rated capacity.
- Operators will not exceed 5 mph or a "fast walk" during operation or PIT.
- Operators shall report all incidents resulting in injury or damage regardless of fault or severity to supervisor and/or safety director who will perform an accident investigation.
- Operators will follow proper battery recharging or refueling Procedure.

| Forklift Daily Checklist | | Forklift No. _____ | | | | | | |
|--|------|------------------------|--------------------------------------|------|------------|------|------|--|
| INSPECTOR: _____ | | FOR THE WEEK OF: _____ | | | | | | |
| VISUALS | MON. | TUE. | WED. | THU. | FRI. | SAT. | SUN. | |
| Engine | | | | | | | | |
| Crankcase oil | | | | | | | | |
| Belts | | | | | | | | |
| Wires | | | | | | | | |
| Fuel line | | | | | | | | |
| Components | | | | | | | | |
| Fuel Tank | | | | | | | | |
| LPG tank straps | | | | | | | | |
| Gauges, Temperature | | | | | | | | |
| Gauges, Hour | | | | | | | | |
| Gauges, Speed | | | | | | | | |
| Gauges, Battery | | | | | | | | |
| Brake Fluid | | | | | | | | |
| Hydraulic Fluid | | | | | | | | |
| Hydraulic Lines | | | | | | | | |
| Tires, Wheels, Rims | | | | | | | | |
| Forks | | | | | | | | |
| Mast Chains | | | | | | | | |
| Body | | | | | | | | |
| Lights, Head | | | | | | | | |
| Lights, Tail | | | | | | | | |
| Lights, Signal | | | | | | | | |
| Lights, Warning | | | | | | | | |
| Fire Extinguisher | | | | | | | | |
| Seat | | | | | | | | |
| Seat Belt | | | | | | | | |
| Overhead Cage | | | | | | | | |
| Operating Instructions | | | | | | | | |
| Lifting Capacity | | | | | | | | |
| OPERATIONAL | | | | | | | | |
| Horn | | | | | | | | |
| Back-Up Warning Device | | | | | | | | |
| Steering | | | | | | | | |
| Parking Brake | | | | | | | | |
| Service Brake | | | | | | | | |
| Gear Shift Lever | | | | | | | | |
| Transmission | | | | | | | | |
| Adjusted Seat | | | | | | | | |
| Seat Safety Switch | | | | | | | | |
| Mast Lift Up/Down | | | | | | | | |
| Mast Tilt | | | | | | | | |
| Mast Side/Squeeze | | | | | | | | |
| OK = <input checked="" type="checkbox"/> | | Not Applicable = N/A | | | Not OK = X | | | |
| SIGNATURE OF INSPECTORS FOR EACH DAY: | | | | | | | | |
| MON. | TUE. | WED. | THU. | | | | | |
| FRI. | SAT. | SUN. | <input type="checkbox"/> SEE REVERSE | | | | | |

TAB12

Forklift Safety
Forklift Daily Checklist

TAB12

Employee Signature _____

Date _____

Witness _____

MMC&E, LLC. CUTTING, WELDING, AND BRAZING

TAB6

I. POLICY STATEMENT

- Protecting our employees and customers involves proactively pursuing loss prevention including fire prevention at locations where we perform work. (Structural fires caused by soldering of copper pipe and fittings can involve staggering costs as well as damage to our reputation and the potential for people to be injured or killed.)
- In order to minimize our exposure and potential for loss, we have developed the attached policies and procedures to prevent fire on our jobsites.

II. PROGRAM GOALS

- Protection of people, property and the environment while engaged in soldering or hot-work activities.
- The jobsite superintendents are responsible for the successful implementation and maintenance of this program at all jobsites for which he/she is responsible.
- All MMC&E LLC. Employees share responsibility for ensuring a safe work environment. Employees engaged directly or indirectly in installation or assembly of plumbing systems at any jobsite are responsible for ensuring the safe and effective performance of soldering operations. These guidelines, site assessment tools and work permits are the minimum guidelines for ensuring a safe work environment.

DEFINITIONS

- **Welding/Hot Work Procedures** - Any activity, which results in sparks, fire, molten slag, or hot material, which has the potential to cause fires or explosions.
- **Examples of Hot Work** - Cutting, brazing, soldering, thawing pipes, grinding and welding.

TAB6

PROCEDURES

MMC&E LLC will ensure that all crews are properly equipped with appropriate tools and materials to assess, prepare and perform hot work. Crews are responsible for daily inspection and replacement of faulty or missing equipment. All crews should insure the proper working condition of all tools prior to leaving the yard location.

- CLASS ABC Fire extinguisher
- Heat Shield- must have at least one 6"x 9" flame and heat resistant pad
- Cool Gel- must have at least two squirt bottles of Cool Gel
- Caulk – must have at least one tube of METACAULK, SPECSEAL Firestop Sealant, Fire Temp CI, LCI Firestop or like Sealant, on your truck at all times
- Eye protection
- Hand protection (heat resistant gloves)
- Shop broom/hand broom
- Dustpan or pail

Proper Use of Equipment:

- Fire extinguisher- must be in the house and available for use within 5 feet of where you are working.
- Heat Shield- must be placed between joint being soldered and any material that may be scorched or burned during soldering.
- Cool Gel- must be applied to all material near the joint being soldered before soldering begins and again after soldering has been completed.

- Metacaulk- must be used to fill in cracks and holes through the wall in which you are soldering
- Eye protection must be worn and hand protection should be used if desired or appropriate.

Proper Preparation of the worksite:

Each worksite must be inspected and approved for hot work prior to beginning any soldering, cutting or grinding. Foremen, lead-men or journeymen plumbers may inspect and approve an area for work. At a minimum:

- All insulation and loose debris must be removed from the work area. The area within three feet of where the soldering/hot-work activity will take place should be swept clean and all debris, sawdust and loose materials removed. Crews should sweep up loose materials and dispose of them away from the area where work will be performed.
- All holes and cracks should be sealed with METACAULK, SPECSEAL Firestop Sealant, Fire Temp CI, LCI Firestop or like Sealant. Wall board, insulation wrap material and other wall and sub-flooring material should be inspected for loose or free hanging sections, holes, or openings where smoldering material may be present after performing work. These areas should be secured or sealed with METACAULK, SPECSEAL Firestop Sealant, Fire Temp CI, LCI Firestop or like Sealant. (If the area of loose material is too large, greater than 1 foot or a hole larger than 2" in diameter that cannot be filled, crews should notify the site foreman and wait for approval to begin before starting hot work.) See instructions for soldering inside of walls.
- Protect yourself and the work area from fire risk. Portable fire extinguishers and/or fire watch should be posted at the area before lighting your torch. (Extinguishers must be fully charged. Partially charged fire extinguishers are not permitted and should be returned to the shop following use)
- Torch Tip should be the appropriate size for the joint you are soldering. Soldering torches should be inspected and tips clean of debris or foreign material prior to lighting the torch. Inspect your fuel tank and ensure all fittings are tight prior to lighting. Employees should ensure they have a "safe zone" perimeter (1 arm length in all directions) before lighting the torch.
- The whole work area should be sprayed with Cool Gel. When ready to proceed, crews should wet an area with Cool Gel, no smaller than 1 foot in diameter around the area where soldering torches will be used. (Where heat shields are used, the area behind the heat shield and around its perimeter must be wet with Cool Gel.)

- Heat Shield should be placed between the joint being soldered and material that may burn or scorch. Burning or scorching of wood or wallboard around the work area should not occur. If any scorching or burning occurs, work should be stopped and the area inspected for better application of the heat shield and wetting with Cool Gel.
- Heat Shield should be removed after soldering and Cool Gel applied to all material in the work area again. Reapply Cool-Gel to the entire area around where soldering took place. The area should be wet, but not saturated with Cool-Gel. If any smoldering material is observed spray the area directly with Cool-Gel until saturated. Extend the wet area around the smoldering area to form a perimeter barrier to prevent the spread of smoldering material.
- Soldering inside of a wall- the opening must extend 1 foot from the joint you are soldering in all directions. (If the opening does not extend one foot in all directions stop and seek direction from the site foreman.) If the opening extends in all directions, wet the interior of the area with Cool-Gel and install your heat shield behind the joint.
- When work is completed, do not leave the area for at least 30 minutes. Smoldering material and hot spots often will show signs of ignition within 30 minutes of completing work. You must re-inspect the area 30 minutes after finishing work to ensure there is no smoking or smoldering material.
- All workers should be aware of the nearest hose bib or water location on the jobsite.
- In the event that soldering activity results in burning material requiring the use of your fire extinguisher, you must do the following:
 1. Sound an alarm – alert others in the area that you have burning material requiring extinguishment with fire suppression equipment.
 2. If the area is small and fire spread is not yet occurring, follow the directions on your extinguisher and discharge your extinguisher at the base of the burning material and spread outwards until the fire is out. Do not attempt to extinguish a fire that has begun to spread or shows evidence that spreading is about to occur. Vacate the area immediately while sounding an alarm to others to vacate as well. Notify the site foreman and call or instruct them to call 911.

4. Notify others in the area that the fire is out. Do not leave the area. Hot spots may still be present and the fire could re-ignite. Wait a minimum of 30 minutes and sweep up the area around the fire. Re-spray the area of the fire with Cool-Gel until saturated. If the area remains cool and no evidence of fire is present. Notify the site foreman and proceed from the area. Inform your crew leader and complete an incident report immediately.

Training:

All employees engaged in hot work or soldering activities are to receive training in proper soldering techniques according to the Copper Piping Institute. Training should be completed prior to performing work unless under the direction and supervision of a qualified licensed journeyman plumber.

- All employees will be trained to perform soldering using the new fire prevention procedures by their safety team leaders, or the designated company trainer.
- All trained employees will receive certification of training and must sign the course completion certificate in order to receive credit for the training.
- Training will be reviewed annually with each employee and documentation retained in their training file, or on hand at the location.

TAB6

**Cutting, Welding and Brazing
Soldering/Hot-Work Site Inspection & Permit**

Employee Signature _____

Date _____

Witness _____

Soldering/Hot-work Site Inspection & Permit

This form must be completed and signed by the appropriate site person prior to and following work.

Location Address _____ Project Name _____

Date _____ Pre-inspection by: _____

TAB6

| Item number | Description | Pre-work Initial by foreman, lead-man or journeyman | Post-work Initial by foreman, lead-man or journeyman |
|-------------|---|--|---|
| 1 | All safety gear is available and on the truck prior to leaving and prior to returning to the shop. | | |
| 2 | Area cleaned of debris and foreign material | | |
| 3 | Insulation material, wall board, sub-floor and wall studs inspected for loose segments, holes or openings. Openings filled with Metacaulk or like caulk product | | |
| 4 | Soldering torches inspected and appropriate for use for the job. | | |
| 5 | Fire prevention gear is available in the work area | | |
| 6 | Heat shields and Cool-gel is available in the work area and is/was used in accordance with procedures | | |
| 7 | Post work fire inspection performed (minimum of 30 minutes after completion of work) | | |

Post Inspection by: _____

Date: _____

PART 5

EMPLOYEE SAFETY ORIENTATION PACKAGE

The Employee Safety Orientation Package is used to communicate and train employees to the Company Safety Rules, Regulations, Policies, Programs and Plans.

The Employee Safety Orientation Package is to be reviewed and signed by all employees upon implementation of this Safety and Health Manual.

The Employee Safety Orientation Package is to be reviewed and signed by all NEW employees upon hire, but BEFORE the start of work.

Miller Mechanical

EMPLOYEE SAFETY ORIENTATION PACKAGE

Miller Mechanical SAFETY PROGRAM ACKNOWLEDGEMENT FORM

Miller Mechanical has a moral and business obligation to provide a safe work environment for its employees, subcontractors and the public. It is, therefore, the Company's policy to abide by the Occupational Safety and Health Standards and to initiate and maintain appropriate practices and procedures that promote safety in the work environment.

My signature below certifies that I have this day reviewed the Miller Mechanical Safety Manual.

The Safety Manual and Company Safety Rules were either read by me or reviewed with me by an employee of Miller Mechanical

I agree to be guided by the safety instructions issued by my supervisors and will report to him all unsafe conditions or practices observed on the work site.

I understand that any violation of the safety rules or refusal to comply with an OSHA "Safety and Health Regulation" is grounds for dismissal.

Signature

Date

Miller Mechanical

ACCIDENT REPORTING AND MEDICAL SERVICES

All accidents must be reported to the Safety Officer or the main office within 1 hour.

All eye, neck, back and knee accidents / injuries require immediate medical attention, no matter how minor.

Accident reports must be 100% complete and turned in to Safety Officer within 24 hours of accident.

Miller Mechanical has a current Panel of Physicians for occupational injuries.

There are at least (6) physicians listed for various services.

Except under emergency conditions, I will obtain first aid treatment at the work site for all injuries and will report to the supervisor before leaving to obtain additional medical attention.

A list of physicians and medical facilities for the company are available at the work site and I fully understand that I must choose one of the named physicians or medical facilities for an on the job injury.

I further understand that if I seek medical treatment elsewhere other than the listed physicians or medical facilities for an on the job injury, I shall be responsible for my own medical bills.

Signature

Date

Miller Mechanical

CONSTRUCTION JOBSITE SAFETY RULES

1. Use and/or possession of intoxicants, alcohol or drugs are not allowed.
2. Hard hats shall be worn by all employees on the jobsite.
3. Long pants and shirt with 4" minimum sleeves are required at all times.
4. Hard sole shoes are required – no tennis shoes.
5. Eye protection, ear protection, and respiratory protection devices shall be worn when required.
6. Only authorized personnel are permitted to operate equipment / vehicles.
7. No riders on machinery or equipment. Seat belt use is required at all times. Riding in the back of trucks is prohibited.
8. All machinery must have operable backup alarms at all times. Seat belts shall be used on all vehicles and equipment.
9. No one shall enter a trench or excavation unless it is properly sloped, shielded or shored.
10. Report all accidents, unsafe conditions / practices and emergencies to your supervisor immediately.

Signature

Date

Miller Mechanical EMPLOYEE CERTIFICATE OF AGREEMENT WITH SUBSTANCE ABUSE POLICY

I hereby consent to submit to specimen tests as shall be determined by Miller Mechanical in the selection process of applicants for employment, for the purpose of determining the drug content thereof.

I agree that Miller Mechanical may collect these specimens for these tests and may test them or forward them to a testing laboratory designated by the company for analysis.

I further agree to and hereby authorize the release of the results of said tests to the company.

I understand that it is the current use of illegal drugs that would prohibit me from being employed at this company.

I further agree to hold harmless the company and its agents (including the above named physician or clinic) from any liability arising in whole or part, out of the collection of specimens, testing, and use of the information from said testing in connection with the company's consideration of my application of employment.

I further agree that a reproduced copy of this pre-employment consent and release form shall have the same force and effect as the original.

I have carefully read the foregoing and fully understand its contents.

I acknowledge that my signing of this consent and release form is a voluntary act on my part and that I have not been coerced into signing this document by anyone.

I do hereby certify that I have received and read the Miller Mechanical Substance Abuse and Testing Policy.

I understand that if my performance indicates it is necessary, or in the case of random testing, I will submit to a substance abuse test.

I also understand that failure to comply with a substance abuse test request, or a positive result may lead to termination of employment and denial of unemployment benefits.

I understand that failure to submit to a substance abuse test, or a positive test result may affect my right to obtain workers' compensation benefits.

I further agree to and hereby authorize the release of the results of said tests to the company. Nothing in this consent form is to be construed as a contract between the parties.

Print Name

Signature

Date

Miller Mechanical HAZARD COMMUNICATION ACKNOWLEDGEMENT FORM

My signature below certifies that I have read and understand this certificate. I know that this company has an active Hazard Communication Safety Program. I understand that my responsibility is to observe and follow safe work guidelines when working with hazardous products. I further understand the following:

Most hazards will fall into five broad categories:

1. Flammables and combustibles
2. Compressed gases
3. Poisons
4. Corrosives
5. Irritants

A hazardous substance can endanger our well being in four ways:

1. Inhaled
2. Ingested
3. Absorbed
4. Injected

Safety Data Sheets (SDS) contain the following information:

1. How to properly handle and store
2. Outline spill clean up procedures
3. Medical and first aid procedures

I know where the SDS, emergency supplies, and emergency phone numbers are located.

I understand how to read, interpret and use the SDS.

I will, when working with hazardous products in containers, follow the guidelines outlined on labels which explain the dangers of the product and the proper way to use this product.

I also understand that the hazardous chemical list, Miller Mechanical Hazard Communication Program, and the SDS are available for my review upon request.

I agree to observe and follow safe work practices while working for Miller Mechanical.

Signature

Date

Miller Mechanical

FIRE EXTINGUISHER SAFETY

- Four things needed to maintain a fire:

1. Fuel
2. Heat
3. Oxygen
4. Chain reaction

Take away any one of the first three and the fire will be out.

- Stay upwind of a fire when using a fire extinguisher.
- Stay back 8 to 10 feet from a grease fire because the force of the pressure / powder from the fire extinguisher may cause the grease to splash.
- The main three classes of fire extinguisher ratings:

| | |
|---------|----------------------|
| Class A | Wood, paper, plastic |
| Class B | Flammable liquids |
| Class C | Electrical |

- **PASS** is the word used to train people properly to use a fire extinguisher.

Pull the pin.

Aim the extinguisher at base of fire.

Squeeze the handle.

Sweep extinguisher from side to side from outside towards center of fire.

- A 10lb. B.C. rated extinguisher should be within 50'-0" of any 5 gallons of fuel.
- A 20 lb. B.C. rated extinguisher should be within 25'-0" maximum 75'-0" of any Liquefied Petroleum Gas tanks or any other fuel tanks greater than 5 gallons capacity.
- All fires no matter how small must be reported immediately to supervisor.
- Mount fire extinguisher: Minimum of 48" from the floor, but no more than 60" off the floor
- The distance one should stand from the base of the fire is written on the fire extinguisher.
For example: (2 ½ lb.) Minimum distance is 6' (20 lb.) minimum distance is 12'.
- Everyone should check the fire extinguisher in work area daily to make sure it has adequate pressure and that the pin is still in the proper place.
- Fire extinguishers shall be serviced at least once a year.
- At each testing, a maintenance tag will be placed on the extinguisher to show the inspection date.

Signature

Date

Miller Mechanical

EMERGENCY PLAN

1. An emergency plan is a set of rules or procedures to be followed by all personnel in the event of an emergency.
2. The emergency plan is maintained by the company and is implemented by the Supervisor. The emergency plan determines the proper access / egress of emergency equipment and/or personnel into or out of the area, in case of emergency.
3. Supervisors will be directed to key locations, to assist in an emergency situation.
4. Each employee is expected to follow directions of supervisors and cooperate in any emergency action effort.
5. Personnel should evacuate the area in an orderly fashion, when instructed to do so by the supervisor.
6. If you become aware of an emergency situation or any injury, notify a supervisor immediately.
7. Notify supervisor of the location of emergency so that 911 can be called.
8. All personnel shall evacuate the area in an orderly manner and reassemble in the designated location.
9. All supervisors are responsible for knowing the location and number of employees at all times.
10. All personnel will be accounted for to ensure that everyone has evacuated the area.
11. Personnel are strictly forbidden to discuss project conditions, incidents, or emergencies with the owner, client, media, press or any person not associated with the emergency.

Signature

Date

Miller Mechanical

29 CFR 1910.134 Appendix D Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirators use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

- Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
- 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 how much it will protect you.
- Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
- Keep track of your respirator so that you do not mistakenly use someone else's respirator.

Signature

Date

Miller Mechanical

LADDER SAFETY

All ladders shall be inspected prior to use.

The use of ladders with broken or missing rungs, broken or split side rails, or other faulty or defective construction is prohibited.

Portable ladder feet shall be placed on a substantial base, on a 4 to 1 pitch and the area around the top and bottom of the ladder should be kept clear and clean at all times.

Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.

Portable ladders shall be tied, blocked or otherwise secured to prevent movement.

All ladders shall extend 36 inches above the landing.

Avoid the use of metal ladders when the possibility of contact with electrical power exists.

Always clean mud or greasy substances from shoes before climbing up ladder.

Always face the ladder and hold on with both hands, whether climbing up or down.

It is dangerous to reach out too far from a ladder in any direction, keep your "center of gravity" as close to the ladder as possible. Move the ladder, as the work requires. Never "walk" or "scoot" ladders while in use.

Never use the top or the top step of a step ladder.

Never use a step ladder as a straight ladder.

Signature

Date

Miller Mechanical

HOUSEKEEPING / CLEAN UP

No one should create hazards for other workers and employees by leaving objects like pipes, carts, boxes, barrels and other trash / debris in the access path, walkways and work areas.

Housekeeping is an important part of our daily work. With the cooperation of everyone we can keep all areas clean, neat, organized and free from tripping hazards.

A clean workplace reduces fire hazards.

Housekeeping should be part of your continuous and DAILY routine.

Follow these steps to help keep your work areas clean and organized:

- Always check / inspect your workplace DAILY.
- Dispose of wastepaper, cardboard, lunch and/or break trash, shipping material, scrap material, etc. into the appropriate container DAILY.
- Clean up anything that is spilled on the floor as soon as possible.
- Keep all aisles, access paths, walkways clear of obstruction...these areas are for people access, not material storage.
- Store all materials neatly and keep them away from traffic access areas and walkway access areas.
- Use nonflammable containers for disposing of scrap and waste substances.
- Always put tools back in their proper places. Tools left on the floor are a hazard!
- Know all locations of first aid and fire fighting equipment.

Take time to think SAFELY!

Signature

Date

Miller Mechanical

ELECTRICAL SAFETY

These regulations apply to electrical installations used on the job, both temporary and permanent installations:

- Extension cords used with portable electrical tools and appliance shall be of three-wire types. Grounds are never to be removed from the extension cords.
- Temporary lights shall be equipped with guards to prevent accidental breakage and/or accidental contact with the bulb.
- Temporary lights shall not be suspended by their electric cords unless cords and lights are designed for this means of suspension.
- Splices of any kind are not allowed. Electrical tape is not an equivalent replacement for the exterior sheathing.
- Electrical and extension cords or cables should not be laid on floors, in walkways, etc., unless it is impractical to do otherwise. They should be suspended or secured in such a way as not to block or hang in walkways, hallways, doorways, or work areas.
- Panel boxes shall have a cover on them at all times, except when being serviced; and when a temporary cover is in place, it should be marked "DANGER - HIGH VOLTAGE" to denote live current.
- Minimum working distances established by OSHA will be followed by unqualified and qualified electricians and workers. The OSHA 1910 Book and OSHA 1926 Book are used and referenced for minimum working distances. De-energized parts not locked or tagged shall be treated as live parts.
- Conductive materials or conductive equipment, such as ducts and pipes shall be avoided. If work is required around conductive material or conductive equipment safe work practices such as those included in this Safety Manual and items listed in Lock-out / Tag-out Program shall be followed.
- Conductive clothing or jewelry shall not be worn when electrical hazards are present, unless the clothing or jewelry is rendered non-conductive by covering, wrapping or other insulation methods.

Use these basic safety procedures when using electrical extension cords:

- Visually inspect the cord for damaged and exposed conductors. If the cord is in damaged condition, don't use it.
- Inspect to make sure the ground prong is in good condition and the cord provides a satisfactory ground for the electrical tools being used.
- Don't drag cords over rough surfaces and don't use them to lift or pull materials. Don't string electrical cords through water or oil and grease. Also, don't hammer nails or staples into cords.
- Disconnect electrical cords at the receptacle. When not in use, the electrical cord should be rolled-up and stored.
- Only round cords that are rated for heavy duty use are allowed on the jobsite. Never use flat power cords on a jobsite.
- Always use GFCI electrical outlets and/or GFCI "pig-tails".

Signature

Date

Miller Mechanical EXCAVATION & TRENCHING

For any and all trenches more than (5') five feet deep, classify the soil as Class "C", slope sides of trench or excavation 1.5 feet horizontal to 1.0 feet vertical.

If a COMPETENT PERSON classifies the soil as Type "A" or Type "B" other slopes can be used.

Other alternatives are to use shoring and/or trench boxes.

All slopes and/or excavations greater than (20') twenty feet deep, MUST be designed by a registered Professional Engineer.

A COMPETENT PERSON is one who has been trained and is capable of identifying existing and predictable hazards in the surrounding work areas, and/or working conditions that are unsanitary, hazardous, or dangerous and who has the authority to take prompt corrective measures to eliminate the hazard. Also, the competent person must have the authority to stop work if a hazard exists.

A competent person must inspect / check all trenches, adjacent areas, and any protective systems for possible cave-ins, failure of protective systems, hazardous conditions, etc.

Inspections MUST be performed DAILY before work begins and/or when any worker enters the area.

Inspections must be performed after any rainstorm, any hazard-increasing occurrence and/or any other change in conditions.

In trenches deeper than (4') four feet, locate means of an exit, such as ladders, steps or ramps so that they are no more than (25') twenty-five feet of travel from anyone in the trench.

Supervisors are required to call U-Locate ... to locate utilities prior to excavation / trenching.

Signature

Date

Miller Mechanical

EMPLOYEE SAFETY ORIENTATION

I have been verbally and visually orientated and/or trained to all Miller Mechanical safety rules, regulations and/or policies. I have also been trained to the Miller Mechanical Safety Manual.

These items include, but are not limited to:

- Safety Acknowledgement Form
- Construction Jobsite Safety Rules
- Substance Abuse Policy
- Hazard Communication Program
- Safety Data Sheets
- Regular Safety Training
- Fire Extinguisher Safety
- Fall Protection Safety
- Emergency Plan
- Personal Protection Equipment (PPE)
- Ladder and Stair Safety
- Housekeeping / Clean-Up
- Electrical Safety
- Excavation and Trenching Safety
- Equipment Safety
- Crane and Rigging Safety
- Vehicle Safety
- Cell Phone and Electronic Device Safety
- Accident Reporting
- Safety Violation Warning System

Questions / Comments: _____

Signature

Date

PART 6

COMPANY SAFETY FORMS

Miller Mechanical COMPANY REPORT OF ACCIDENT

This form is to be used in conjunction with OSHA 301 Form

Jobsite:_____

Jobsite Number:_____

Date of Injury:_____

Name of Injured:_____

Age:_____

Employed By:_____

SS#:_____

Occupation:_____

Drug / Alcohol Test Performed? Yes_____ No_____

Description of Occurrence (Include location, time of day, related details, and resulting injuries.)

Witness:

Name:_____ Employed by:_____

Drug / Alcohol Test: Yes_____ No_____

Comments:_____

Did any unsafe conditions exist?_____

Did employee contribute to accident?_____

Corrective action taken?_____

Signature

Supervisor Signature

Miller Mechanical

SUBCONTRACTOR'S REPORT OF ACCIDENT

This form is to be used in conjunction with OSHA 301 Form

Jobsite:_____

Jobsite Number:_____

Date of Injury:_____

Name of Injured:_____

Age:_____

Employed By:_____

SS#:_____

Occupation:_____

Drug / Alcohol Test Performed? Yes_____ No_____

Description of Occurrence (Include location, time of day, related details, and resulting injuries.)

Witness:

Name:_____ Employed by:_____

Drug / Alcohol Test: Yes_____ No_____

Comments:_____

Did any unsafe conditions exist?_____

Did employee contribute to accident?_____

Corrective action taken?_____

Signature

Supervisor Signature

Miller Mechanical VEHICLE ACCIDENT REPORT

Date: _____ Name: _____

State and City Accident Occurred: _____

Name of Injured Persons: _____

Make and Model of Company Vehicle: _____

Description of Damage to Miller Mechanical Vehicle: _____

Description of Damage to Other Vehicles and/or Property: _____

Description of Accident: _____

Signature: _____

Miller Mechanical

SAFETY WARNING

On this date, _____ and time _____,

at this location _____

employee (name), _____

working for (company) _____

failed to comply with the safety rules and/or policies: _____

1st Offense - written warning

2nd Offense - written warning, subject to termination

3rd Offense - subject to termination

Action taken to correct safety warning: _____

Employee Signature

Date

Supervisor Signature

Date

Miller Mechanical

OBSERVED BEHAVIOR / FOR-CAUSE RECORDING FORM

Name of Employee Observed: _____

Location / Department: _____ Date: _____

Time of Observation: From: _____ AM _____ PM

To: _____ AM _____ PM

OBSERVED PERSONAL BEHAVIOR (check all appropriate items):

- | | | | |
|-------------------------------------|---|-------------------------------------|--|
| 1. <u>SPEECH</u> | 2. <u>AWARENESS</u> | 3. <u>BALANCE</u> | 4. <u>WALKING</u> |
| <input type="checkbox"/> Normal | <input type="checkbox"/> Normal | <input type="checkbox"/> Normal | <input type="checkbox"/> Normal |
| <input type="checkbox"/> Incoherent | <input type="checkbox"/> Confused | <input type="checkbox"/> Swaying | <input type="checkbox"/> Stumbling |
| <input type="checkbox"/> Confused | <input type="checkbox"/> Sleepy | <input type="checkbox"/> Staggering | <input type="checkbox"/> Swaying |
| <input type="checkbox"/> Slurred | <input type="checkbox"/> Paranoid | <input type="checkbox"/> Falling | <input type="checkbox"/> Arms Raised Forward |
| <input type="checkbox"/> Whispering | <input type="checkbox"/> Lack of Coordination | | <input type="checkbox"/> Falling |
| <input type="checkbox"/> Silent | | | <input type="checkbox"/> Reaching |

5. Description of other observed actions or behavior indicative of possible drug use:
(Be specific and objective).

6. Description of action taken: _____

7. Name / Title of Observing Management or Witnesses:

A. Print Name:

Sign Name:

Title: _____ Date: _____

B. Print Name:

Sign Name:

Title: _____ Date: _____

THIS FORM MUST BE PREPARED WHEN AN EMPLOYEE IS SUSPECTED OF DRUG USE.

Miller Mechanical
END OF THE WEEK EMPLOYEE INJURY STATEMENT

Job Name / Location _____

Superintendent _____

Circle One

I have not or have received any injury or been involved in any accident during the course of this week's work.

I have not or have witnessed any injury or accident during the course of this weeks work.

I am signing this form voluntarily for accident tracking purposes

Print Name

Signature

Date

CONFINED SPACE PRE-ENTRY CHECKLIST

Date: _____ Time: _____

Jobsite Name: _____

Location on Jobsite: _____

Purpose of Entry: _____

Job Supervisor / Entry Supervisor Name: _____

First Atmospheric Check:

Time _____

| | |
|--------------------------|----------------|
| Oxygen | _____ % |
| Explosive | _____ % L.F.L. |
| Toxic – H ₂ S | _____ PPM |
| Toxic – CO | _____ PPM |

Hazard Source Isolation:

Pumps or lines blinded, disconnected, or blocked

N/A YES NO

☐ ☐ ☐

Ventilation:

Mechanical Ventilation

Natural Ventilation

☐ ☐ ☐

☐ ☐ ☐

Atmospheric Check after Isolation and/or Ventilation:

Time _____

| | |
|--------------------------|----------------|
| Oxygen | _____ % |
| Explosive | _____ % L.F.L. |
| Toxic – H ₂ S | _____ PPM |
| Toxic – CO | _____ PPM |

Communication Procedures: _____

Rescue Procedures: _____

Entry, Attendants, and Supervisor persons:

Successfully completed required training?

Is training current?

N/A YES NO

☐ ☐ ☐

☐ ☐ ☐

Equipment:

Atmospheric gas monitor – pre-tested?

Safety harnesses for entry persons / attendants

Lifelines and hoisting equipment

Communication equipment

PPE & protective clothing

All electric equipment non-sparking tools

☐ ☐ ☐

☐ ☐ ☐

☐ ☐ ☐

☐ ☐ ☐

☐ ☐ ☐

☐ ☐ ☐

| | YES | NO |
|---|--------------------------|--------------------------|
| Did your survey of the surrounding area show it to be free of hazards such as drifting vapors from tanks, piping or sewers? | <input type="checkbox"/> | <input type="checkbox"/> |
| Does your knowledge of other discharges indicate this area is likely to remain free of dangerous air contaminants while occupied? | <input type="checkbox"/> | <input type="checkbox"/> |
| Are you trained in operation of the gas monitor to be used? | <input type="checkbox"/> | <input type="checkbox"/> |
| Has a gas monitor functional test been performed before monitor is used? | <input type="checkbox"/> | <input type="checkbox"/> |
| Was the atmosphere of the confined space tested prior to entry? | <input type="checkbox"/> | <input type="checkbox"/> |
| Did the atmosphere check as acceptable (no alarms given)? | <input type="checkbox"/> | <input type="checkbox"/> |
| Will the atmosphere be regularly monitored while the space is occupied? | <input type="checkbox"/> | <input type="checkbox"/> |
| Has the inside of the space been visually inspected and free of hazards? | <input type="checkbox"/> | <input type="checkbox"/> |
| Has the outside of the space been visually inspected and free of hazards? | <input type="checkbox"/> | <input type="checkbox"/> |

If any of the above questions are answered "NO" ... DO NOT enter. Contact your immediate supervisor.

Periodic Atmospheric Test:

| | |
|------------|--------------------------|
| Time _____ | Oxygen _____ % |
| | Explosive _____ % L.F.L. |
| | Toxic – H2S _____ PPM |
| | Toxic – CO _____ PPM |
| Time _____ | Oxygen _____ % |
| | Explosive _____ % L.F.L. |
| | Toxic – H2S _____ PPM |
| | Toxic – CO _____ PPM |
| Time _____ | Oxygen _____ % |
| | Explosive _____ % L.F.L. |
| | Toxic – H2S _____ PPM |
| | Toxic – CO _____ PPM |

I have reviewed the work task authorized by this pre-entry checklist and the information contained in this pre-entry checklist, is accurate.

Written safety instructions and safety procedures have been reviewed with entry / attendant persons.

Entry cannot be approved if any boxes are marked "NO", page 1 or 2. (If NO, proceed to Entry Permit)

By completing this pre-entry checklist, I have reclassified the entry to a NON-PERMIT required entry.

The checklist is to be kept at the jobsite, during duration of entry. Return job site copy to office following job completion.

Additional Information _____

Entry Supervisor Printed Name

Entry Supervisor Signature

ENTRY PERMIT VALID FOR ONLY 8 HOURS.

| | | |
|------------------------------|-----------------------|----------------------------|
| Acceptable Entry Conditions: | Oxygen | Above 19.5% Below 23.5% |
| | Lower Flammable Limit | Under 10% |
| | Carbon Monoxide | Under 35 ppm |
| | Hydrogen Sulfide | Under 10 ppm |

First Atmospheric Test:

| | | |
|------------|-------------|----------------|
| Time _____ | Oxygen | _____ % |
| | Explosive | _____ % L.F.L. |
| | Toxic – H2S | _____ PPM |
| | Toxic – CO | _____ PPM |

Periodic Atmospheric Test:

| | | |
|------------|-------------|----------------|
| Time _____ | Oxygen | _____ % |
| | Explosive | _____ % L.F.L. |
| | Toxic – H2S | _____ PPM |
| | Toxic – CO | _____ PPM |

| | | |
|------------|-------------|----------------|
| Time _____ | Oxygen | _____ % |
| | Explosive | _____ % L.F.L. |
| | Toxic – H2S | _____ PPM |
| | Toxic – CO | _____ PPM |

| | | |
|------------|-------------|----------------|
| Time _____ | Oxygen | _____ % |
| | Explosive | _____ % L.F.L. |
| | Toxic – H2S | _____ PPM |
| | Toxic – CO | _____ PPM |

| Instrument(s) used | Model / Type | Serial # or Unit # |
|--------------------|--------------|--------------------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |

Misc. Information / Comments: _____

I have reviewed the work task authorized by this Confined Space - Entry Permit and the information contained in this Confined Space - Entry Permit, is accurate.

Written safety instructions and safety procedures have been reviewed with entry / attendant persons.

By completing this Entry Permit, I authorize the work to be conducted in this Confined Space.

The Entry Permit is to be kept at the jobsite, during duration of entry. Return job site copy to office following job completion.

Additional Information _____

Entry Supervisor Printed Name

Entry Supervisor Signature

Miller Mechanical WEEKLY SAFETY TRAINING

DATE: _____ NUMBER PERSONS ATTENDING: _____

JOB NAME: _____ JOB # _____

NAME OF PERSON
CONDUCTING TRAINING _____

REGULAR TOPICS INCLUDE: PPE Requirements, any job specific topics, incidents, etc.

MAIN TOPICS DISCUSSED: _____

ADDITIONAL TOPICS DISCUSSED: _____

SUGGESTIONS OFFERED: _____

Person Conducting Training Signature

Date

Attendee Printed Name

Attendee Signature

Attendee Printed Name

Attendee Signature

Attendee Printed Name

Attendee Signature

Attendee Printed Name

Attendee Signature

Attendee Printed Name

Attendee Signature

Attendee Printed Name

Attendee Signature

Attendee Printed Name

Attendee Signature

Attendee Printed Name

Attendee Signature

**Miller Mechanical
Fall Protection Training**

Date of Training

Attendee Printed Name

Attendee Signature

Attendee Printed Name

Attendee Signature

Attendee Printed Name

Attendee Signature

Attendee Printed Name

Attendee Signature

Attendee Printed Name

Attendee Signature

Attendee Printed Name

Attendee Signature

Attendee Printed Name

Attendee Signature

Attendee Printed Name

Attendee Signature

Attendee Printed Name

Attendee Signature

Instructor Printed Name

Instructor Signature

Miller Mechanical

SAFETY INSPECTION REPORT

DATE: _____

JOB SITE: _____

RECORD KEEPING

| | | | |
|--|-----|----|-----|
| A. Safety items posted? | YES | NO | N/A |
| B. Safety Manual, Haz Com Program, SDS accessible to everyone? | YES | NO | N/A |
| C. Weekly Tool Box Safety Training Session documented? | YES | NO | N/A |
| D. All federal, state, local employment notices posted? Easily accessible? | YES | NO | N/A |

COMMENTS: _____

PERSONAL PROTECTIVE EQUIPMENT

| | | | |
|--|-----|----|-----|
| A. Hard hats, safety glasses, work clothes / boots - Worn by everyone? | YES | NO | N/A |
| B. Fall harnesses, guardrails or other fall protection measure used by everyone? | YES | NO | N/A |

COMMENTS: _____

FLOOR OPENINGS, PLATFORMS, HOLES, RUNWAYS

| | | | |
|---|-----|----|-----|
| A. Guardrails, in place? In good condition? Properly secured / inspected? | YES | NO | N/A |
| B. All floor openings covered correctly and marked? | YES | NO | N/A |
| C. All materials safe distance from building perimeter and secured? | YES | NO | N/A |

COMMENTS: _____

FIRE PREVENTION

| | | | |
|---|-----|----|-----|
| A. Fire extinguishers in place? Inspected? | YES | NO | N/A |
| B. Fire watch in use at welding operations? | YES | NO | N/A |
| C. Flammable gases, liquids stored/used properly? | YES | NO | N/A |

COMMENTS: _____

PUBLIC AND PROPERTY PROTECTION

| | | | |
|--|-----|----|-----|
| A. Barricades, lights, and signs provided? | YES | NO | N/A |
|--|-----|----|-----|

COMMENTS: _____

ELECTRICAL TOOLS

| | | | |
|---|-----|----|-----|
| A. Properly guarded, grounded, GFCI in use? | YES | NO | N/A |
| B. Extension cords in good condition? | YES | NO | N/A |
| C. Inspected frequently? . | YES | NO | N/A |
| D. Path to ground permanent and continuous? | YES | NO | N/A |

COMMENTS: _____

HOUSEKEEPING

- | | | | |
|--|-----|----|-----|
| A. Work areas clean and materials stacked? | YES | NO | N/A |
| B. Nails removed? Site free of trash and debris? | YES | NO | N/A |

COMMENTS: _____

FIRST AID

- | | | | |
|---|-----|----|-----|
| A. Sufficient supplies? Easily accessible? Protected from dust and weather? | YES | NO | N/A |
|---|-----|----|-----|

COMMENTS: _____

LADDERS AND SCAFFOLDS

- | | | | |
|---|-----|----|-----|
| A. Erected properly? Guardrails / toeboards in use? | YES | NO | N/A |
| B. Work platforms fully decked? Secured? | YES | NO | N/A |

COMMENTS: _____

CRANES AND HOISTS

- | | | | |
|--|-----|----|-----|
| A. Is the equipment in good condition, brakes, cables, etc.? | YES | NO | N/A |
| B. Are the hoistway and swing radius areas adequately protected? | YES | NO | N/A |
| C. Is the wire rope in good condition? | YES | NO | N/A |
| D. Are the operating and signaling rules posted and followed? | YES | NO | N/A |
| E. Are the load capacities posted? Log books up-to-date? | YES | NO | N/A |

COMMENTS: _____

TRENCHES AND EXCAVATIONS

- | | | | |
|---|-----|----|-----|
| A. Easily accessible ladders or ramps? | YES | NO | N/A |
| B. Sides properly shored, braced, or sloped? | YES | NO | N/A |
| C. Spoils and equipment kept back safe distance from sides? | YES | NO | N/A |
| D. Perimeter barricades in use and maintained? | YES | NO | N/A |

COMMENTS: _____

HAND TOOLS

- | | | | |
|---|-----|----|-----|
| A. Are tools free of obvious physical damage? | YES | NO | N/A |
| B. Are handles on tools in a good condition? | YES | NO | N/A |
| C. Are tools cleaned and stored properly? | YES | NO | N/A |
| D. Are meters in good condition and operating properly? | YES | NO | N/A |

COMMENTS: _____

Signature

Date

Miller Mechanical

SAFETY INSPECTION REPORT

| | | | |
|--|-----|----|-----|
| Are employees wearing hard hats? | YES | NO | N/A |
| Do employees have safety glasses available? | YES | NO | N/A |
| Are first aid kits available? | YES | NO | N/A |
| Are all employees aware of the emergency action plan? | YES | NO | N/A |
| Are all fall protection devices in order? | YES | NO | N/A |
| Is the walking / working area free from trip and fall hazards? | YES | NO | N/A |
| Are all SDS's available? | YES | NO | N/A |
| Is the work area's free of trash and debris? | YES | NO | N/A |
| Are fire extinguishers available in work areas? | YES | NO | N/A |
| Are all power tools maintained and in proper working order? | YES | NO | N/A |
| Is the OSHA poster available? | YES | NO | N/A |
| Are ladders set up and used properly? | YES | NO | N/A |
| Do all workers know where the Haz Com / SDS book is? | YES | NO | N/A |
| Are subcontractors following safety requirements? | YES | NO | N/A |
| Are all hand tools free from splits and cracks? | YES | NO | N/A |
| Are all employees trained in the use of special equipment? | YES | NO | N/A |
| Is all temporary power protected by an adequate GFCI? | YES | NO | N/A |
| Are extension cords in good condition? | YES | NO | N/A |
| Is the Lock Out / Tag Out program being utilized? | YES | NO | N/A |

Additional Comments _____

Signature

Date

Miller Mechanical

COMPETENT PERSON

EXCAVATION DAILY INSPECTION

Date: _____ Time: _____

Jobsite Name: _____

Location on Jobsite: _____

Type of weather: _____ Temperature: AM _____ PM _____

| | | |
|--|-----|----|
| Is the excavation less than 5 feet in depth? | YES | NO |
| Is 1.5 to 1 sloping of trench walls being used? | YES | NO |
| Have all open excavations and trenches been inspected? | YES | NO |
| Is an Engineered report being used? | YES | NO |
| Has the soil been classified (Types A____, B____, or C____)? | YES | NO |
| Are the slopes at proper angles (1.5 to 1, etc.)? | YES | NO |
| Is a trench box in use (the rated capacity is _____ psf)? | YES | NO |
| Is a shoring system in use (aluminum _____, or wood _____) | YES | NO |
| Have utility companies been notified by the "One-Call"? | YES | NO |
| Are ladders____, stairways____, or ramps____ in use? | YES | NO |

If any of the above answers are "NO", a possible hazardous condition exists and the minimum OSHA Standards must be used and complied with in full (unless a slope of 1.5 to 1 is excavated for the trench walls) in all cases.

| | | |
|--|-----|----|
| Are spoil piles located too close to the trench? | YES | NO |
| Are surcharge loads too close to the trench? | YES | NO |
| Are there tension cracks along the trench? | YES | NO |
| Are there shrinkage cracks in the trench walls? | YES | NO |
| Has water accumulated in the trench? | YES | NO |
| Has any soil sloughed off or caved in since yesterday? | YES | NO |
| Is backfilling of the trench being delayed? | YES | NO |
| Is there a layered soil condition present? | YES | NO |
| Are other construction activities near the trench? | YES | NO |
| Is there any vehicular traffic near the trench? | YES | NO |
| Are there any trees, boulders, signs, poles, etc. in area? | YES | NO |
| Are subsurface conditions different than was anticipated? | YES | NO |
| Are there other utility lines near the trench? | YES | NO |
| Any fluid leakage detected in the aluminum shoring? | YES | NO |
| Do wood shores need to be tightened? | YES | NO |
| Can the trench be classified as a "confined space"? | YES | NO |

If any of the above answers is "YES", there is a changed condition which affects the soil classification and thereby affects employee safety. All work must cease until corrective action is taken and soil is reclassified.

Corrective Action Taken: _____

Comments: _____

Print Name _____

Signature _____

Miller Mechanical SAFETY PROGRAM SUBCONTRACTOR ACKNOWLEDGEMENT FORM

My signature below certifies that I understand OSHA Safety & Health Regulations and that I understand Miller Mechanical has an active Safety Program and that I agree to follow these rules, regulations and programs while on Miller Mechanical work sites. I will report all unsafe conditions or practices observed on the work site.

I understand that any violation of the Miller Mechanical Safety Program or refusal to comply with the OSHA Safety & Health Regulations are grounds for removal from Miller Mechanical work site.

I understand that all Subcontractor employees, vendors, etc are required to follow OSHA Safety & Health Regulations and Miller Mechanical Safety Program as a minimum, at all times on the work site.

- Report all injuries, accidents and/or incidents to Miller Mechanical immediately.
- All Subcontractor employees must wear appropriate safe, construction clothing while on work site. (Hard soled shoes, long pants, full shirts with a minimum 4" sleeve, etc.)
- The proper Personal Protective Equipment, must be provided and used when required. Hard hats are required at all times on Miller Mechanical work sites.
- The work site, work area, storage areas, etc. will be kept clean and organized at all times. Subcontractors are responsible for continuous clean-up, daily clean-up, end of the activity clean-up, final clean-up, lunch / break area clean-up, etc.
- All tools (power and hand) and all equipment / vehicles must be in a good, clean, well maintained, safe condition to be on Miller Mechanical work sites.
- All electrical cords must be maintained in a good, safe condition.
- All employees on Miller Mechanical work sites must attend safety training at least once per week. Notes from safety training and attendance must be documented.
- Subcontractors must provide First Aid kits, medical services and emergency procedures for all its employees.
- Fresh, clean water and drinking cups must be provided for employees.
- Subcontractors must assure employee knowledge of the location of SDS sheets.
- Each Subcontractor must have a "Competent Person" onsite during construction activities. "Proof" of safety training and competency must be available at the work site.

Print Name of Subcontractor _____

Print Person's Name _____

Person's Signature _____ Date _____

Miller Mechanical

Guide to Address Fall Hazards

Construction Jobsites

Jobsite Name _____

Jobsite Location _____

Today's Date: _____

Plan Effective Dates: from _____ to _____

Name of Competent Person
preparing this Plan (print): _____

Criteria used to determine Fall Hazards as per Subpart M of CFR 29 Part 1926 (Construction):

| | YES | NO |
|---|-------|-------|
| 1. Unprotected sides and edges over 6' above a lower level | _____ | _____ |
| 2. Leading edge over 6' above a lower level | _____ | _____ |
| 3. Hoist area over 6' above a lower level | _____ | _____ |
| 4. Holes and/or skylights over 6' above a lower level | _____ | _____ |
| 5. Work on formwork / reinforcing steel over 6' above lower level | _____ | _____ |
| 6. Ramps, runways, other walkways over 6' above lower level | _____ | _____ |
| 7. Working at edge or crossing over excavation over 6' deep | _____ | _____ |
| 8. Working above dangerous equipment less than 6' below | _____ | _____ |
| 9. Performing overhand brick laying or related work above 6' | _____ | _____ |
| 10. Roofing work on Low slope roof over 6' above lower level | _____ | _____ |
| 11. Roofing work on Steep roof over 6' above lower level | _____ | _____ |
| 12. Engaged in precast concrete erection work above 6' | _____ | _____ |
| 13. Engaged in residential work over 6' above a lower level | _____ | _____ |
| 14. Working on, at, above, or near wall opening over 6' above LL | _____ | _____ |
| 15. Any other walking / working surface above 6' | _____ | _____ |

List any area where there was a "YES" response:

1. _____
How do we address this hazard? _____

2. _____
How do we address this hazard? _____

3. _____
How do we address this hazard? _____

4. _____
How do we address this hazard? _____

5. _____
How do we address this hazard? _____

6. _____
How do we address this hazard? _____

NOTE: Guardrail systems, safety net systems, or personal fall arrest systems must be considered first. Employees engaged in "leading edge activities", "precast concrete erection activities" or "residential construction activities" ... after proving it would be infeasible or more dangerous to consider one of those conventional three fall protection measures, may devise a fall protection plan that is adequate in preventing fall hazards.

Company policies:

- Ladders: In addition to the rules covered in Subpart X and our Company Safety Manual, Miller Mechanical also requires personal fall protection for employees working on a stepladder or supported ladder within 10' of an unprotected side, edge, or hoist area which is over 6' above a lower level. A second employee will hold and steady the ladder until the personal fall arrest system is installed for the employee using the ladder, and likewise when the same is removed.
- Scaffolds: In addition to the rules covered in Subpart L, Miller Mechanical also requires guard rail on all scaffolds on working surfaces over 10' above a lower level.
- Boom lifts: Any and all employees in a boom lift will wear the proper personal fall protection devices which will be properly attached to a point in the basket so designated by the manufacturer.

- Hoist areas: Where guardrail has to be taken down temporarily, it is the strict policy of Miller Mechanical to establish a controlled access zone with a safety monitor and with working personnel attached to either a tether or a retractable lifeline. When the guardrail system is reinstalled, either the superintendent or site safety person will inspect before removing the CAZ and safety monitor. Should any of this occur after or before the working hours of the superintendent or safety person, the CAZ will remain until clearance is given to remove it.
- Holes: Holes over 2" in their least dimension must be covered, secured from moving, color coded and/or identified as a hole cover ("Hole Cover"). We will do this on any hole we create, and will inform the controlling contractor when our employees are exposed to such holes created by others and not properly covered, marked or guardrailed and toeboarded.
- Harnesses: Only full body harnesses are allowed; no safety belts. Lanyards shall be 6' or less in length and shall be made of synthetic fibers only. When using lanyards, a "shock absorber" shall be installed between the anchorage and the lanyard. When attaching the body harness to an anchorage using a retractable device, no shock absorber shall be used. Double locking snap hooks shall be utilized at all times. Snap hooks can only be attached to body harnesses or anchorages; never to another snap hook and never back to the same lanyard they are attached to.
- Anchorage: Anchorage points for most applications will have a capacity of at least 5000# and 3000# for retractables. Most scaffold manufacturers are on record as saying the scaffold shall not be used as an anchorage for fall protection; we concur. All anchorages shall be inspected by a competent person before utilizing, and such inspection shall be documented. Manufacturer's anchorages such as in an aerial lift need only be inspected at delivery and the before each use.
- Inspections: Our designated competent person, _____, shall inspect body harnesses, lanyards, shock absorbers, life lines, retractables, rope grabs, and anchorages before each shift. Such inspections shall be documented and retained for six months past the completion of the project involved. For that purpose, each item will carry an identification number where practical.

Signature

Date

Miller Mechanical Site Specific Safety Plan Construction Jobsites

Date Submitted: _____

Name of Project: _____

Project Address: _____

General

Our company safety manual has been written specifically for and tailored to Miller Mechanical. The Miller Mechanical safety manual addresses most of the hazards anticipated on this project.

A copy of our current Safety Manual and Safety Data Sheets will be provided upon request.

Site Specific Safety

1. Miller Mechanical's "Site Specific Safety Plan" and general safety rules and regulations are implemented by our Project Managers

Project Manager for this project

2. Identification of safety hazards, plan to address safety hazards and enforcement of safety rules and regulations will be conducted by our designated Supervisors / Competent Persons.

Name of Supervisor / Competent Person for this project

3. Weekly Safety Training Sessions are conducted. These weekly safety training sessions will address specific safety rules and/or site specific safety issues on the project. Weekly safety training sessions are documented and available upon request.

4. Miller Mechanical personnel and Miller Mechanical subcontractors are required to attend and participate in weekly safety training sessions.
5. The use of the necessary and required PPE and the inspection of the necessary and required PPE will be conducted by the supervisors and workers on the project.
6. First Aid kits will be available to Miller Mechanical personnel.
7. On site accidents and injuries are reported within one hour to the Miller Mechanical.
8. Required posters and safety signage will be available at general contractor office and at Miller Mechanical branch office and Miller Mechanical main office.
9. General SDS, company safety manual and site specific plan will be available at GC field office and company job truck.
10. Miller Mechanical has an active substance abuse policy in effect.
11. Safety violations are issued based on company enforcement disciplinary policy.
12. Miller Mechanical subcontractors are required to follow Miller Mechanical Safety Manual and Miller Mechanical site specific safety plans, as a minimum.
13. Please see attached list of "hazard assessment" and "hazard abatement".

Please contact me if you have any questions or additional needs.

Thank You,

Signature of Miller Mechanical Manager

Printed Name of Miller Mechanical Manager

Date

Miller Mechanical

Project Name:

Project Address:

Plan Prepared By:

Note: This plan is a reasonable effort to identify possible hazards and risks associated with this site. It is not comprehensive in nature and does not encompass all hazards, preventions or remedies for listed hazards. In the event the information contained in this Hazard Assessment and Abatement plan conflicts with OSHA 1926 code, then the OSHA 1926 code will prevail.

| Hazard / Risk | Assessment | Abatement |
|---------------------|--|---|
| Head Injury | Impact, falling / flying objects and electrical can cause injuries to the head | Personnel will wear hard hats when required by hazard and/or when client requires the use of hard hats |
| Eye / Face Injury | Flying or falling foreign objects can cause eye and/or face injuries | Personnel shall wear eye and/or face protection during drilling, cutting, chipping, sanding, grinding and scraping type of activities |
| Hearing Injury | Personnel can be subjected to loud noises from tools, equipment and activities | Personnel shall wear hearing protection anytime sound levels are above 90 decibels or long term exposure to loud noises |
| Hand Injury | Hands can be injured, cut or punctured when handling tools and/or materials | Personnel shall wear gloves or other hand protection when handling abrasive, heavy or sharp materials |
| Back Injury | Improper lifting techniques or attempting to lift too much can cause back injury | Personnel should lift items while bending at the knees. Also, personnel should get assistance when lifting large or heavy items |
| Foot Injury | Foot injury can result from exposed nails, falling objects and uneven surfaces | Personnel should wear work boots with a good sole and ankle support. Steel toe work boots should be worn when required |
| General Body Injury | Bodily injury can result from operations, activities, environment and other personnel | Personnel shall wear appropriate PPE. Personnel shall wear good clothing, work boots, long pants and shirt with a 4" minimum sleeve |
| Respiratory Injury | Dust, gases and vapors can result in injuries to the respiratory system | Personnel are required to wear respiratory protection when required. Ventilation, wet cutting, etc. shall be used, if possible |
| Chemical Hazards | Chemical hazards are present on jobsites and can be created with incorrect handling or usage | Safety Data Sheets will be available at client facilities, in company truck or a company offices |

Miller Mechanical

Project Name:

Project Address:

Plan Prepared By:

Note: This plan is a reasonable effort to identify possible hazards and risks associated with this site. It is not comprehensive in nature and does not encompass all hazards, preventions or remedies for listed hazards. In the event the information contained in this Hazard Assessment and Abatement plan conflicts with OSHA 1926 code, then the OSHA 1926 code will prevail.

| Hazard / Risk | Assessment | Abatement |
|---------------------------|--|---|
| Slip / Trip / Falls | Slip, Trips and Falls usually result from lack of traction, poor housekeeping and improper storage | Works areas will be kept clean and clear of obstructions. Storage areas should be stacked neatly and with adequate access |
| Tool Hazards | Tools can create hazards with missing or damaged guards, cords or switches | Tools will be inspected to assure in safe operating condition, guards are in place, cords are in good shape, including ground prongs |
| Ladder Hazards | Improper use of extension ladders and step ladders can result in injuries | Personnel are required to be trained on ladder use and use proper ladders and proper ladder use techniques. |
| Fall from Elevations | Personnel can be injured from falls from elevations are a major source of accidents and injuries | Personnel shall never work from unprotected heights. Ladders, scissors lifts or aerial lifts shall be utilized. |
| Electrical Hazards | Personnel can be injured by electrical hazards of tools, equipment and building electrical systems | Personnel are reminded to wear appropriate PPE, not to work in proximity of energized electrical circuits or utilize Lock Out / Tag Out |
| Struck By Hazards | Personnel can be injured by being struck by falling, flying or moving objects, tools or equipment | Personnel are reminded to wear PPE, not work under suspended loads and to be aware of workplace surroundings |
| Caught In Between Hazards | Personnel can be injured by crushing or pinching between objects, walls or other equipment | Personnel are reminded to wear appropriate PPE, not to work in "pinch points" and to be aware of workplace surroundings |

PART 7

SAFETY DATA SHEETS (SDS)

SAFETY DATA SHEET (SDS)

A Safety Data Sheet (SDS) is a fact sheet for a chemical which poses a physical or health hazard at your work site. SDS must be in English and contain the following information:

- Identity of the chemical (as used on the label)
- Physical hazards
- Health hazards
- Primary routes of entry
- Whether it is a carcinogen
- Precautions for safe handling and use
- Emergency and first aid procedures
- Date of preparation of last revision
- Name, address, and telephone number of manufacturer, importer, or other responsible party

If relevant information in one of the categories was unavailable at the time of preparation, the SDS must indicate that no information was found. Blank spaces are not permitted. If you find a blank space on a SDS, contact your supervisor.

Your company must have a SDS for each hazardous chemical it uses. Copies must be made readily available at your work sites. When you travel between work sites during the day, the SDS may be kept at a central location.

If there are workers from other companies at your work site, they must be made aware of the chemicals you use and the location of your SDS. They must do the same for you. All SDS can be at a central location and managed by the general contractor.

Labels and Labeling Requirements

Containers of hazardous chemicals must be labeled in English. Information may also be presented in other languages for non-English speaking employees, but English is required. It is required that labels contain the following information:

- Identity of the hazardous chemical
- Appropriate hazard warnings
- Name and address of the chemical manufacturer, importer, or other responsible party
- Pictograms

On individual stationary containers you may use signs, placards, batch tickets, or printed operating procedures in place of labels.

Where the chemical is intended only for the use of the employee marking the transfer during his or her work shift, the company is not required to label portable transfer vessels. If, however, that vessel or container is transferred for use on another work shift, it has to carry a label.

How to Read an SDS

An SDS must precede or accompany the initial shipment but does not have to be physically attached to it. If you receive subsequent shipments of the same item, a new SDS is not required to be sent to you unless the chemical make-up of the product changes.

To ensure proper record keeping and maintenance of SDS, you should:

- Make sure any employee who purchases supplies for your company is on the lookout for SDS.
- Include a request for a SDS and a label that meets the requirements of the Hazard Communications Standard on all purchase orders.
- Ask for a SDS for any material bearing a label indicating it is a hazard unless a SDS is already on file.
- To deal with the multi-employer situation, you may request information from other contractors on the site about hazardous substances and chemicals known to be at the site.

While SDS will appear in many different formats, they will contain essentially the same information. The information on a SDS is extremely technical in nature and should be used as a reference or as a backup to information on a label. A SDS tracking OSHA Form 174 would offer the following information:

SECTION 1 – IDENTIFICATION

1. Chemical name, as it appears on the label.
2. Manufacturer's name and address.
3. Emergency telephone number in the event of an emergency involving the substance.
4. Date prepared and the signature of the preparer.

SECTION II – HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

1. Hazardous Components: Contains the specific chemical identity, its formula, and any common names it is known by.
2. OSHA Permissible Exposure Limits (PEL): PEL is the permissible maximum amount of the chemical a person may be safely exposed to without harm.
3. American Conference of Governmental Industrial Hygienists Threshold Limit Value (TLV): TLV is the concentration of a chemical in the air that can be breathed for five consecutive eight-hour workdays by most persons without harmful effects. It is generally expressed in parts per million.
4. Other limits recommended: Any other recommended limitation on the use of the chemical by any agency, scientific group, or organization should be included.

SECTION III – PHYSICAL / CHEMICAL CHARACTERISTICS

1. Boiling Point: The temperature at which a liquid boils.
2. Vapor Pressure (mm Hg): Vapor pressure measures a liquid's tendency to evaporate. The higher the pressure, the faster it will evaporate.
3. Vapor Density: Indicates the weight of an equal volume of air. If a vapor is heavier than air (vapor density greater than 1), it will sink to the ground. If it is lighter than air (vapor density less than 1), it will rise.
4. Solubility in Water: Indicates whether the chemical can mix with water in any ratio without separating.
5. Appearance and Odor: A brief description of the chemical's color and smell.
6. Specific Gravity: Ratio of the weight of the material to the weight of an equal volume of water. The specific gravity determines whether the material floats or sinks in water. Specific gravity values less than or equal to 1 indicate that water should not be used to extinguish a fire involving the substance unless the water comes from automatic sprinklers.
7. Melting Point: Indicates the temperature at which a solid changes to a liquid.
8. Evaporation Point (Butyl Acetate 1): Indicates the temperature at which a substance evaporates.

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

1. Flash Point: Indicates the lowest temperature at which a liquid gives off enough vapor to ignite in air when exposed to a flame.
2. Flammable Limits: Indicates the range of vapor concentrations which will explode when an ignition source is present.
3. Extinguishing Media: Materials suitable for putting out a fire involving the identified chemical. These fire fighting agents are: water fog, foam, alcohol foam, carbon dioxide, and dry chemical. The four classes of fire are:
 - Class A – paper, wood, straw, cloth
 - Class B – flammable and combustible liquids
 - Class C – fire involving energized electrical equipment
 - Class D – combustible metals
4. Special Fire Fighting Procedures: Indicates the chemical's special characteristics when it comes in contact with fire.
5. Unusual Fire and Explosion Hazards: Indicates any special types of hazards requiring attention. The description will indicate whether the chemical is difficult to extinguish, will re-ignite spontaneously, and how it reacts with water and other extinguishing agents.

SECTION V – REACTIVITY DATA

1. **Stability:** Indicates conditions that contribute to the stability or instability of a chemical when it is exposed to heat, pressure, or excessive shock during storage, use, misuse, or transport. Look to this section to identify specific conditions to be avoided.
2. **Incompatibility (materials to avoid):** Indicates various materials or conditions you must keep the chemical away from to avoid adverse reactions.
3. **Hazardous Decomposition or By-products:** Indicates gases or vapors which are released when the chemical is burned or decomposes.
4. **Hazardous Polymerization:** Polymerization is a chemical reaction when molecules of the chemical combine with molecules of another chemical to form a larger, different material. This reaction is accompanied by the release of large amounts of energy which can produce fire or other hazards. Polymerization can occur when the chemical comes in contact with certain plastics, rubber, or coatings.

SECTION VI – HEALTH HAZARD DATA

1. **Route(s) of Entry:** A chemical may enter the body either through inhalation, by contact with the skin or eyes, or by being swallowed.
2. **Health Hazards:** Indicates any long-term (chronic) or short-term (acute) effects on the human body.
3. **Carcinogenetic:** Indicates whether the chemical causes cancer.
4. **Signs and Symptoms of Exposure:** Indicates and describes the effects of exposure to the chemical and the most common resulting sensations.
5. **Medical Conditions Severely Aggravated by Exposure:** Indicates how the chemical will affect any pre-existing medical conditions.
6. **Emergency and First Aid Procedures:** Indicates first aid procedures to use in order to reduce the hazardous effects of the chemical. The techniques covered will deal only with inhalation of the chemical, and skin or eye contact with it.

SECTION VII – PRECAUTIONS FOR SAFE HANDLING

1. **Steps to be taken in case Material is Released or Spilled:** Indicates precautions such as avoid breathing gases and vapors; avoid contact with liquids. This section also gives recommended techniques to use in controlling land or water spills.
2. **Waste Disposal Methods:** Indicates proper disposal of the chemical and contaminated materials.
3. **Precautions to Take in Handling and Storage:** Indicates safe handling and storage procedures to be taken to avoid hazardous reactions.
4. **Other Precautions:** Indicates special precautions to use in handling or disposing of the chemical.

SECTION VIII – CONTROL MEASURES

1. The measures indicates in this section should be taken whenever the chemical is handled or disposed of during normal use. They are not measures to be used solely during emergencies or accidental spills.
2. **Respiratory Protection:** If needed, specifies type of respirators required by OSHA when the chemical is used, even as a precautionary measure in non-emergency situations.
3. **Ventilation:** Indicates ventilating systems needed to prevent over-exposure to the chemical. "Local exhaust" ventilation is a system with high speed and low volume. "Mechanical (general) ventilation" is the regular ventilation system used to heat / cool an enclosed area in a permanent facility.
4. **Protective Gloves:** Indicates whether or not gloves must be worn when the chemical is handled. If gloves are required for skin protection, the type of material they should be made of will be indicated.
5. **Eye Protection:** Indicates appropriate eye protection, such as face shields, safety goggles or glasses.
6. **Other Protective Clothing:** Indicates protective equipment and the materials they should be made of to effectively prevent skin contact.

SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES

SECTION X – REACTIVITY AND STABILITY

SECTION XI – TOXICOLOGICAL INFORMATION

SECTION XII – ECOLOGICAL INFORMATION

SECTION XIII – DISPOSAL CONSIDERATIONS

SECTION XIV – TRANSPORT INFORMATION

SECTION XV – REGULATORY INFORMATION

SECTION XVI – OTHER INFORMATION

[X] Insert SDS here ... OR ... separate manual ?

TABLE OF CONTENTS

SECTIONS A THRU H

- A. CAULK& SEALANTS**
 - 1. FS-ONE, HILTI
 - 2. FIRE SEALANT, 3M
 - 3. POLYSEAMSEAL SEALANT
 - 4. CLEAR SILICONE, PROFLO
 - 5. WHITE CAULK, PROFLO
 - 6. VULKEM SEALANT

- B. IPS, WELD-ON, SOLVENTS & CEMENTS**
 - 1. GLUE, 717
 - 2. PRIMER, P-68
 - 3. CPVC GLUE, GOLD
 - 4. CPVC GLUE, ORANGE
 - 5. CPVC GLUE, ORANGE
 - 6. CLEAR PRIMER, P-70

- C. OATEY, SOLVENTS & CEMENTS**
 - 1. HD PVC CEMENT
 - 2. REG. PVC CEMENT
 - 3. PURPLE PRIMER
 - 4. CPVC CEMENT, GOLD
 - 5. HD ORANGE CEMENT
 - 6. CLEAR PRIMER
 - 7. PURPLE PRIMER W/CLEANER
 - 8. RAIN OR SHINE CEMENT
 - 9. ALL PURPOSE CEMENT

- D. THREAD SEALANT, OILS, LUBE'S**
 - 1. WHITE PIPE COUMPOUND
 - 2. #5 PASTE
 - 3. LEAK DETECTOR
 - 4. CLEAR CUTTING OIL
 - 5. DARK CUTTING OIL

TABLE OF CONTENTS

- E. SOLVENTS & CEMENTS
 - 1. CEMENT
 - 2. PVC PRIMER
 - 3. CPVC CEMENT

- F. PUTTY, SOLDER, FLUX
 - 1. LEAD FREE SOLDER
 - 2. NO# 5 PASTE
 - 3. FLUX
 - 4. PLUMBERS PUTTY

- G. EQUIPMENT FUEL & SOLDERING GASES
 - 1. GASOLINE
 - 2. DIESEL
 - 3. LOW SULFER DIESEL
 - 4. MAPP GASS
 - 5. PROPANE
 - 6. ACETYLENE

- H. INSULATION
 - 1. FIBERGLASS
 - 2. RUBBER TEX

SAFETY PROGRAM TABLE OF CONTENTS:

| | | | | | | |
|-----------------------------------|--|--|--|--|--------|--|
| | | | | | | |
| GENERAL SAFETY | | | | | TAB 1 | |
| RULES OF CONDUCT | | | | | TAB 2 | |
| ACCIDENT, INCIDENT MANAGEMENT | | | | | TAB 3 | |
| BLOOD BORNE PATHOGENS | | | | | TAB 4 | |
| PERMIT REQUIRED CONFINED SPACES | | | | | TAB 5 | |
| CUTTING, WELDING, AND BRAZING | | | | | TAB 6 | |
| ELECTRICAL SAFETY | | | | | TAB 7 | |
| EMERGENCY PREPAREDNESS | | | | | TAB 8 | |
| EXCAVATION, TRENCHING AND SHORING | | | | | TAB 9 | |
| FALL PROTECTIION | | | | | TAB 10 | |
| FIRE PREVENTION | | | | | TAB 11 | |
| FORKLIFT SAFETY | | | | | TAB 12 | |
| HAZARDOUS MATERIALS HANDELING | | | | | TAB 13 | |
| HEARING CONSERVATION PROGRAM | | | | | TAB 14 | |
| LADDER SAFETY | | | | | TAB 15 | |
| LOCKOUT/TAGOUT PROGRAM | | | | | TAB 16 | |
| MATERIAL HANDELING | | | | | TAB 17 | |
| PORTABLE POWER TOOLS | | | | | TAB 18 | |
| PERSONAL PROTECTIVE EQUIPMENT | | | | | TAB 19 | |
| PROJECT HAZARD ANALYSIS | | | | | TAB 20 | |
| SCAFFOLDING | | | | | TAB 21 | |
| STORM WATER MANAGEMENT | | | | | TAB 22 | |
| RESPIRATORY PROTECTION PLAN | | | | | TAB 23 | |
| OSHA RECORDKEEPING MANAGEMENT | | | | | TAB 24 | |
| VEHICLE SAFETY PROGRAM | | | | | TAB 25 | |
| GLOSSARY OF COMMON TERMS | | | | | TAB 26 | |

Caulk & Sealants

Contents:

- 1. FS-ONE, HILTI**
- 2. FIRE SEALANT, 3M**
- 3. POLYSEAMSEAL SEALANT**
- 4. CLEAR SILICONE, PROFLO**
- 5. WHITE CAULK, PROFLO**
- 6. VULKEM SEALANT**

Section A

#1





MSDS No.: 259
 Revision No.: 010
 Revision Date: 08/17/04
 Page: 1 of 2

MATERIAL SAFETY DATA SHEET

Product name: FS-ONE High Performance Intumescent Firestop Sealant
Description: One-part acrylic-based sealant
Supplier: Hilti, Inc. P.O. Box 21148, Tulsa, OK 74121
Emergency # (Chem-Trec.): 1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)

INGREDIENTS AND EXPOSURE LIMITS

| Ingredients: | CAS Number: | PEL: | TLV: | STEL: |
|-------------------------|-------------|----------------------------|-----------------------------|-------|
| Polyacrylate dispersion | Mixture | NE | NE | NE |
| Calcium carbonate | 001317-65-3 | 5 mg/m ³ (T) | 10 mg/m ³ (T) | NE |
| Zinc borate | 138265-88-0 | NE | NE | NE |
| Ammonium polyphosphate | 068333-79-9 | NE | NE | NE |
| Talc | 014807-96-6 | 20 mppcf | 2 mg/m ³ | NE |
| Expandable graphite | 012777-87-6 | 5 mg/m ³ (T) | 2 mg/m ³ (T) | NE |
| Ethylene glycol | 000107-21-1 | NE | C:100 mg/m ³ (A) | NE |
| Polybutene | 009003-29-6 | NE | NE | NE |
| Iron oxide | 001309-37-1 | 10 mg/m ³ | 5 mg/m ³ | NE |
| Glass filament | 065997-17-3 | NE | 5 mg/m ³ (T) | NE |
| Silicon dioxide | 014808-60-7 | 0.05 mg/m ³ (T) | 0.1 mg/m ³ (T) | NE |
| Water | 007732-18-5 | NE | NE | NE |

Abbreviations: PEL = OSHA Permissible Exposure Limit. TLV = ACGIH Threshold Limit Value. C = Ceiling. STEL = Short Term Exposure Limit. NE = None Established. NA = Not Applicable. (T) indicates "as total dust". (R) indicates "as respirable fraction". (A) indicates "as an aerosol". mppcf = million particles per cubic foot.

PHYSICAL DATA

| | | | |
|---------------------------------|-----------------|-----------------------------|--------------------|
| Appearance: | Red paste. | Odor: | Odorless. |
| Vapor Density: (air = 1) | Not determined. | Vapor Pressure: | 23mbar @ 20C / 68F |
| Boiling Point: | Not applicable. | VOC Content: | 75.0 g/L. |
| Evaporation Rate: | Not applicable. | Solubility in Water: | Soluble. |
| Specific Gravity: | 1.5 | pH: | Not determined. |

FIRE AND EXPLOSION HAZARD DATA

| | | | |
|--|--|--------------------------|-----------------|
| Flash Point: | Non-flammable. | Flammable Limits: | Not applicable. |
| Extinguishing Media: | Not applicable. Use extinguishing media as appropriate for surrounding fire. | | |
| Special Fire Fighting Procedures: | None known. Use a self-contained breathing apparatus when fighting fires involving chemicals. | | |
| Unusual Fire and Explosion Hazards: | None known. Thermal decomposition products can be formed such as oxides of carbon, sulfur and phosphorous. | | |

REACTIVITY DATA

| | | | |
|--------------------------------|--|----------------------------------|-----------------|
| Stability: | Stable. | Hazardous Polymerization: | Will not occur. |
| Incompatibility: | Strong acids, peroxides, and oxidizing agents. | | |
| Decomposition Products: | Thermal decomposition can yield CO and CO ₂ . | | |
| Conditions to Avoid: | None known. | | |

HEALTH HAZARD DATA

| | |
|---|--|
| Known Hazards: | None known. |
| Signs and Symptoms of Exposure: | Possibly irritating upon contact with the eyes or upon repeated contact with the skin. |
| Medical Conditions Aggravated by Exposure: | Eye and skin conditions. |
| Routes of Exposure: | Dermal. |

Carcinogenicity: IARC classifies crystalline silica (quartz sand) as Group I based upon evidence among workers in industries where there has been long-term and chronic exposure (via inhalation) to silica dust; e.g. mining, quarry, stone crushing, refractory brick and pottery workers. This product does not pose a dust hazard; therefore, this classification is not relevant. Based upon the nature and intended use of this product, it does not pose an increased cancer risk to workers.

EMERGENCY AND FIRST AID PROCEDURES

Eyes: Immediately flush with plenty of water. Call a physician if symptoms occur.

Skin: Immediately wipe off material and wash with soap and water. Material can adhere to the skin. If material has adhered to the skin, use an abrasive containing hand cleaner. If material does not come off, buff with a pumice stone.

Inhalation: Move victim to fresh air if discomfort develops. Call a physician if symptoms persist.

Ingestion: Seek medical attention. Do not induce vomiting unless directed by a physician. If a large quantity was ingested, give 1 to 2 glasses of water to dilute. Never give anything by mouth to an unconscious person.

Other: Referral to a physician is recommended if there is any question about the seriousness of the injury/exposure.

CONTROL MEASURES AND PERSONAL PROTECTIVE EQUIPMENT

Ventilation: General (natural or mechanically induced fresh air movements).

Eye Protection: Not required, however, safety glasses should be worn in most industrial settings.

Skin Protection: Avoid skin contact. Cloth gloves are suitable for hand protection.

Respiratory Protection: None normally required. Where ventilation is inadequate to control vapors, use a NIOSH-approved respirator with organic vapor cartridges. Never enter a confined space without an appropriate air-supplied respirator.

PRECAUTIONS FOR SAFE HANDLING AND USE

Handling and Storing Precautions: Store in a cool, dry area preferably between 40° and 77° F. Keep from freezing. Do not store in direct sunlight. Avoid contact with the eyes or skin. Practice good hygiene; i.e. always wash thoroughly after handling and before eating or smoking. For industrial use only. Keep out of reach of children. Follow label/use instructions.

Spill Procedures: Immediately wipe away spilled material before it hardens. Place in a container for proper disposal in accordance with all applicable local, state, or federal requirements.

REGULATORY INFORMATION

Hazard Communication: This MSDS has been prepared in accordance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

HMIS Codes: Health 1, Flammability 0, Reactivity 0, PPE B

DOT Shipping Name: Not regulated.

IATA / ICAO Shipping Name: Not regulated.

TSCA Inventory Status: Chemical components listed on TSCA inventory.

SARA Title III, Section 313: This product contains < 3% ethylene glycol (CAS 107-21-1) and < 15% zinc borate (re: zinc compounds) which are subject to reporting under Section 313 of SARA Title III (40 CFR Part 372).

EPA Waste Code(s): Not regulated by EPA as a hazardous waste.

Waste Disposal Methods: Consult with regulatory agencies or your corporate personnel for disposal methods that comply with local, state, and federal safety, health and environmental regulations.

CONTACTS

| | | | |
|---------------------------------|--|---------------------------|----------------|
| Customer Service: | 1 800 879 8000 | Technical Service: | 1 800 879 8000 |
| Health / Safety: | 1 800 879 6000 | Jerry Metcalf | (x6704) |
| Emergency # (Chem-Trec): | 1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries) | | |

The information and recommendations contained herein are based upon data believed to be correct; however, no guarantee or warranty of any kind expressed or implied is made with respect to the information provided.

Section A

#2



MATERIAL SAFETY DATA SHEET 3M FireBarrier™ Sealant IC 15 WB+ 07/11/12



Material Safety Data Sheet

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M FireBarrier™ Sealant IC 15 WB+
MANUFACTURER: 3M
DIVISION: Building & Commercial Services Division
ADDRESS: 3M Center, St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 07/11/12
Supersedes Date: 09/16/11

Document Group: 19-9776-6

Product Use:

Specific Use: Fire Barrier Sealant
Intended Use: Sealant

SECTION 2: INGREDIENTS

| <u>Ingredient</u> | <u>C.A.S. No.</u> | <u>% by Wt</u> |
|---|--------------------------|-----------------------|
| Calcium Carbonate | 1317-65-3 | 30 - 60 |
| Water | 7732-18-5 | 10 - 30 |
| Polymer | Trade Secret | 10 - 30 |
| ZINC BORATE 2335 | 138265-88-0 | 3 - 7 |
| Sodium Silicate | 1344-09-8 | 3 - 7 |
| Fiberglass | 65997-17-3 | 0.5 - 1.5 |
| POLYOXYETHYLENE MONOOCTYLPHENYL ETHER | 9036-19-5 | 0.1 - 1 |
| SODIUM NONYLPHENYL POLYETHOXY ETHER SULFATE | 9014-90-8 | < 1 |
| Quartz Silica | 14808-60-7 | < 0.5 |

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Paste

Odor, Color, Grade: Light yellow viscous paste with a mild odor

General Physical Form: Solid

MATERIAL SAFETY DATA SHEET 3M FireBarrier™ Sealant IC 15 WB+ 07/11/12

Immediate health, physical, and environmental hazards: May cause target organ effects. Contains a chemical or chemicals which can cause cancer.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact:

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, and itching.

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May be absorbed following ingestion and cause target organ effects.

Target Organ Effects:

Prolonged or repeated exposure by ingestion may cause:

Kidney/Bladder Effects: Signs/symptoms may include changes in urine production, abdominal or lower back pain, increased protein in urine, increased blood urea nitrogen (BUN), blood in urine, and painful urination.

Carcinogenicity:

Contains a chemical or chemicals which can cause cancer.

Ingredient

Quartz Silica

C.A.S. No.

14808-60-7

Class Description

Grp. 1: Carcinogenic to humans

Regulation

International Agency for Research on Cancer

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

Skin Contact: Wash affected area with soap and water. If signs/symptoms develop, get medical attention.

Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.

If Swallowed: Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature

No Data Available

Flash Point

Flash point > 93 °C (200 °F)

Flammable Limits(LEL)

Not Applicable

Flammable Limits(UEL)

Not Applicable

MATERIAL SAFETY DATA SHEET 3M FireBarrier™ Sealant IC 15 WB+ 07/11/12

OSHA Flammability Classification:

Not Applicable

5.2 EXTINGUISHING MEDIA

Non-combustible. Choose material suitable for surrounding fire.

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: No unusual fire or explosion hazards are anticipated.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode.

6.2. Environmental precautions

Place in a closed container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

Clean-up methods

Observe precautions from other sections. Call 3M- HELPS line (1-800-364-3577) for more information on handling and managing the spill. Collect as much of the spilled material as possible. Clean up residue.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

Keep out of the reach of children. For industrial or professional use only. Avoid eye contact with dust or airborne particles. Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

7.2 STORAGE

Store under normal warehouse conditions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Use in a well-ventilated area.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection

MATERIAL SAFETY DATA SHEET 3M FireBarrier™ Sealant IC 15 WB+ 07/11/12

Avoid eye contact.

The following eye protection(s) are recommended: Safety Glasses with side shields

Indirect Vented Goggles

.

8.2.2 Skin Protection

Avoid skin contact.

Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.

Gloves made from the following material(s) are recommended: Butyl Rubber

Nitrile Rubber

.

8.2.3 Respiratory Protection

Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection.

8.2.4 Prevention of Swallowing

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

8.3 EXPOSURE GUIDELINES

| <u>Ingredient</u> | <u>Authority</u> | <u>Type</u> | <u>Limit</u> | <u>Additional Information</u> |
|--------------------------|-------------------------|----------------------------------|---------------------|--------------------------------------|
| Calcium Carbonate | OSHA | TWA, respirable fraction | 5 mg/m3 | |
| Calcium Carbonate | OSHA | TWA, as total dust | 15 mg/m3 | |
| Fiberglass | Manufacturer determined | TWA, as dust | 10 mg/m3 | |
| Quartz Silica | ACGIH | TWA, respirable fraction | 0.025 mg/m3 | |
| Quartz Silica | OSHA | TWA concentration, respirable | 0.1 mg/m3 | |
| Quartz Silica | OSHA | TWA concentration, as total dust | 0.3 mg/m3 | |

SOURCE OF EXPOSURE LIMIT DATA:

ACGIH: American Conference of Governmental Industrial Hygienists

CMRG: Chemical Manufacturer Recommended Guideline

OSHA: Occupational Safety and Health Administration

AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form:

Odor, Color, Grade:

General Physical Form:

Autoignition temperature

Flash Point

Flammable Limits(LEL)

Flammable Limits(UEL)

Boiling Point

Paste

Light yellow viscous paste with a mild odor

Solid

No Data Available

Flash point > 93 °C (200 °F)

Not Applicable

Not Applicable

Not Applicable

MATERIAL SAFETY DATA SHEET 3M FireBarrier™ Sealant IC 15 WB+ 07/11/12

| | |
|--------------------------------|------------------------|
| Specific Gravity | 1.4 [Ref Std: WATER=1] |
| Melting point | No Data Available |
| Solubility in Water | Moderate |
| Volatile Organic Compounds | < 2 g/l |
| VOC Less H2O & Exempt Solvents | < 2 g/l |

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid:

10.1 Conditions to avoid

None known

10.2 Materials to avoid

None known

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

Substance

Carbon monoxide
Carbon dioxide

Condition

Not Specified
Not Specified

SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

Not determined.

CHEMICAL FATE INFORMATION

Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: For quantities <100 lbs. (50kg): dispose of waste product in a sanitary landfill. For larger quantities: Dispose of waste product in a facility permitted to accept chemical waste.

MATERIAL SAFETY DATA SHEET 3M FireBarrier™ Sealant IC 15 WB+ 07/11/12

EPA Hazardous Waste Number (RCRA): Not regulated

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14: TRANSPORT INFORMATION

ID Number(s):

42-0016-4768-6, 42-0016-4769-4, 42-0016-4770-2, 98-0400-5509-1, 98-0400-5510-9, 98-0400-5511-7, 98-0400-5512-5, 98-0400-5630-5

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS

Contact 3M for more information.

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

| <u>Ingredient</u> | <u>C.A.S. No</u> | <u>% by Wt</u> |
|-----------------------------------|------------------|----------------|
| ZINC BORATE 2335 (ZINC COMPOUNDS) | 138265-88-0 | 3 - 7 |

STATE REGULATIONS

Contact 3M for more information.

CALIFORNIA PROPOSITION 65

| <u>Ingredient</u> | <u>C.A.S. No.</u> | <u>Classification</u> |
|---|-------------------|-----------------------|
| SILICA, CRYSTALLINE (AIRBORNE PARTICLES OF RESPIRABLE SIZE) | SEQ677 | **Carcinogen |

** WARNING: contains a chemical which can cause cancer.

CHEMICAL INVENTORIES

The components of this product are in compliance with the chemical notification requirements of TSCA.

All applicable chemical ingredients in this material are listed on the European Inventory of Existing Chemical Substances (EINECS), or are exempt polymers whose monomers are listed on EINECS. This product complies with the New Zealand Hazardous Substances and New Organisms Act (1996).

Contact 3M for more information.

INTERNATIONAL REGULATIONS

Contact 3M for more information.

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification

Health: 2 Flammability: 0 Reactivity: 0 Special Hazards: None

| |
|--|
| MATERIAL SAFETY DATA SHEET 3M FireBarrier™ Sealant IC 15 WB+ 07/11/12 |
|--|

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Revision Changes:

Section 1: Product name was modified.
Section 3: Potential effects from skin contact information was modified.
Section 3: Potential effects from ingestion information was modified.
Section 7: Handling information was modified.
Section 4: First aid for skin contact - decontamination - was modified.
Section 4: First aid for skin contact - medical assistance - was modified.
Section 3: Immediate other hazard(s) was modified.
Page Heading: Product name was modified.
Section 15: Inventories information was modified.
Section 5: Flash point information was modified.
Section 9: Flash point information was modified.
Section 14: ID Number(s) Template 1 was modified.
Section 2: Ingredient table was modified.
Section 8: Exposure guidelines ingredient information was modified.
Section 6: Personal precautions information was modified.
Copyright was modified.
Section 3: Other potential health effects heading was added.
Section 3: Other health effects information was added.
Section 15: California proposition 65 ingredient information was added.
Section 15: California proposition 65 heading was added.
Section 15: California proposition 65 cancer warning was added.
Section 3: Carcinogenicity comment was deleted.
Section 4: First aid for skin contact - termination of exposure - was deleted.
Section 4: First aid for skin contact - handling - was deleted.

DISCLAIMER: The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

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3M USA MSDSs are available at www.3M.com

Section A

#3



MATERIAL SAFETY DATA SHEET

MSDS Name: POLYSEAMSEAL(R) ALL-PURPOSE ADHESIVE CAULK
MSDS Number: 1151099
Version Number: 4
Revision Date: October 23, 2009
Page Number: 1

SECTION I - PRODUCT AND COMPANY INFORMATION

Product Name: POLYSEAMSEAL(R) ALL-PURPOSE ADHESIVE
CAULK
HMIS Hazard Rating: Health: 1 Fire: 0 Reactivity: 0 PPE: B

Company Identification: HENKEL CORPORATION
7405 PRODUCTION DRIVE
MENTOR OH 44060

Contact (24 hour): Customer Affairs (800) 624-7767
Information phone/Fax: CHEMTREC Emergency
(24 hour) (800) 424-9300

Product Class: CAULK
Trade Name: POLYSEAMSEAL
Product Code:

SECTION II - INGREDIENT AND HAZARD INFORMATION

| Hazardous Ingredient Name | CAS Number | Percent | TSCA |
|---------------------------|------------|---------|------|
| N-Butyl Acetate | 0123-86-4 | < 5.0 | Y |
| Titanium Dioxide ** | 13463-67-7 | < 5.0 | Y |
| Ethylene Glycol | 107-21-1 | < 5.0 | Y |

Ingredient Notes:

Remaining ingredients are not considered OSHA hazardous.

**The main hazard for Titanium Dioxide is dust inhalation. Because of its incorporation into the caulk, exposure by inhalation is unlikely.

SECTION III - PHYSICAL AND CHEMICAL PROPERTIES

Form: High viscosity caulk
Appearance/Color: White & colors
Odor: Banana odor
Solubility (in water): yes
pH Value, +/- .3: 7.5
Boiling Range: 212.°F (100.°C)
Vapor Pressure (mmHg): 15.0 68.°F (20.°C)
Evaporation Rate: 0.5 times Slower than n-Butyl Acetate

MATERIAL SAFETY DATA SHEET

MSDS Name: POLYSEAMSEAL(R) ALL-PURPOSE ADHESIVE CAULK
MSDS Number: 1151099
Version Number 4
Revision Date: October 23, 2009
Page Number: 2

Vapor Density: Heavier than air

% Volatile, Weight approx. 30.%
% Volatile, Volume approx. 45.%
Specific Gravity: 1.245
VOC (less H2O or exempt) 72 Gr/L, 3.9%

NOTE:

Freeze Point : 32 Deg F

SECTION IV - FIRE FIGHTING MEASURES

Flammability Class N/A
Flash Point: 119.°F (48.33°C)
Tag Closed Cup
Explosive Range (LEL/UEL): Not Available

EXTINGUISHING MEDIA:

Dry chemical -- Carbon Dioxide -- Foam -- Water Fog
Will not burn in wet state.

SPECIAL FIRE-FIGHTING PROCEDURES:

Water may be used to cool and protect exposed containers.
Caution should be taken because uncured material is water soluble.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Any closed container may burst when exposed to extreme heat or fire.

SECTION V - HEALTH HAZARD DATA

| Route | Species | Exposure and Dose |
|-------|---------|-------------------|
|-------|---------|-------------------|

ROUTES OF ENTRY:

ENTRY THROUGH...Inhalation and skin most likely

CARCINOGENICITY...

| | | | | | |
|------|-----|------------------|-----|-------|----|
| NTP? | N/E | IARC Monographs? | N/E | OHSA? | NO |
|------|-----|------------------|-----|-------|----|

EFFECTS OF OVEREXPOSURE

Inhalation: May cause nose or throat irritation.
Skin/Eye Contact: May cause irritation.
Ingestion: Swallowing large amounts may cause nausea,
vomiting. (an unlikely route of entry)

FIRST AID MEASURES

Inhalation: If affected by inhalation, remove to fresh air.
Eye Contact: Flush with water for at least 15 minutes,
and get prompt medical attention.

MATERIAL SAFETY DATA SHEET

MSDS Name: POLYSEAMSEAL(R) ALL-PURPOSE ADHESIVE CAULK
MSDS Number: 1151099
Version Number: 4
Revision Date: October 23, 2009
Page Number: 3

Skin Contact: Wash skin thoroughly with soap and water.
Ingestion: Drink water, and get medical attention.

N/A= Not applicable N/AV=Not available N/E, N/est=Not established

CHRONIC HAZARDS

Swallowing ETHYLENE GLYCOL may cause gastrointestinal irritation.
Butyl Acetate: Vapor harmful. May affect brain and nervous system causing dizziness, headaches or nausea. May cause severe eye irritation upon eye contact.

NOTICE: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain, nervous system, liver or kidney damage or may cause cardiac arrhythmia. INTENTIONAL misuse of this product by deliberately inhaling its vapors may be harmful or fatal.

SECTION VI - STABILITY AND REACTIVITY

Stability: Product is stable under normal storage conditions
Hazardous Polymerization: Will not occur under normal conditions

INCOMPATIBILITY:

None

CONDITIONS TO AVOID:

None

HAZARDOUS DECOMPOSITION PRODUCTS:

May produce oxides of carbon and oxides of nitrogen when burned.

SECTION VII - ACCIDENTAL RELEASE AND DISPOSAL MEASURES:**STEPS TO BE TAKEN IN CASE OF SPILL:**

Wear appropriate protective clothing. Add dry absorbent and shovel or sweep up. Place in an appropriate container and seal.

WASTE DISPOSAL METHOD:

Dispose of in accordance with Federal, State, and Local regulations.

SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION**Occupational Exposure Limits**

| | ACGIH TLV | ACGIH TLV-C | ACGIH STEL | OSHA STEL | OSHA PEL |
|---------------------|-------------|-------------|------------|------------|-------------|
| N-Butyl Acetate | 150.00 PPM | N/est | 200.00 PPM | 200.00 PPM | 150.00 PPM |
| Titanium Dioxide ** | 10.00 mg/F3 | N/est | N/est | N/est | 15.00 mg/F3 |

MATERIAL SAFETY DATA SHEET

MSDS Name: POLYSEAMSEAL(R) ALL-PURPOSE ADHESIVE CAULK
MSDS Number: 1151099
Version Number: 4
Revision Date: October 23, 2009
Page Number: 4

| | | | | |
|-----------------|--------------|-------|-------|-----------|
| Ethylene Glycol | | | | |
| N/est | 100.00 mg/M3 | N/est | N/est | 50.00 PPM |

RESPIRATORY PROTECTION:

NIOSH respirators recommended if vapors and mists are generated.

VENTILATION:

Local exhaust is recommended for safe practice.

PROTECTIVE CLOTHING:

Gloves and clothing should be worn to prevent repeated skin contact.

EYE PROTECTION:

Eye protection should be worn.

HANDLING AND STORAGE PRECAUTIONS:

Keep from freezing. Keep away from heat.
Keep containers closed when not in use.
Avoid prolonged or repeated contact with skin.
Keep out of the reach of children.

SECTION IX - TRANSPORT INFORMATION: (not all sizes available)**GROUND TRANSPORT (DOT) - DOMESTIC**

Caulking compound, Non Regulated

AIR TRANSPORT (DOT) - DOMESTIC

Caulking compound, Non Regulated

AIR TRANSPORT (IATA) - INTERNATIONAL

Caulking compound, Non Regulated

MARINE - OCEAN TRANSPORT (IMDG)

Caulking compound, Non Regulated

SECTION X - REGULATORY INFORMATION:

SARA TITLE III SECTION 313:

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right to Know Act of 1986 and of 40 CFR 372:

| Ingredient Name | CAS Number | Percent |
|-----------------|------------|---------|
| Ethylene Glycol | 107-21-1 | < 5.0 |

All chemical substances are TSCA listed.

MATERIAL SAFETY DATA SHEET

MSDS Name: POLYSEAMSEAL(R) ALL-PURPOSE ADHESIVE CAULK

MSDS Number: 1151099

Version Number 4

Revision Date: October 23, 2009

Page Number: 5

California PROP.65 Chemicals: none known

DISCLAIMER:

The information contained herein is based on data available as of the date of preparation of this MSDS and which we believe to be reliable. However, no warranty is expressed or implied regarding the accuracy of the data. We shall not be responsible for the use of this information, or of any product, method, apparatus mentioned, and user must make his own investigation to determine the suitability of the information or products for his particular purpose, for the protection of the environment, and the health & safety of the users of this material.

PFC500 Series

100% Silicone Sealant

**DESCRIPTION**

PROFLO 100% SILICONE SEALANTS are one-part sealants that offer excellent adhesion, weatherability and elasticity for general glazing and sealing applications. Available in translucent and white. Cured sealant is mildew resistant. Meets Specifications: TT-S-00230C; TT-S-001543A/ASTM C-920.

MODEL NUMBERS

PFC500ALU 10.1 oz cartridge, Aluminum
PFC500CLR 10.1 oz cartridge, Clear
PFC500WHT 10.1 oz cartridge, White

PROMINENT FEATURES

- Excellent adhesion with lasting flexibility
- Easy Soap and water clean-up
- Interior/Exterior
- Cured sealant is mildew resistant

BASIC USES

Indoor/Outdoor. Sealing: Glass, metal, granite and plastic. General Sealing: Sheet metal, skylights, ventilators, air conditioning, metal/plastic signs, glass block structures, bedding of marine hardware. PROFLO 100% SILICONE SEALANTS exhibit typical silicone sealant resistance to the environments encountered in general purpose glazing and sealing applications. These environments include ultraviolet radiation, ozone, high and low temperature extremes and hydrolytic stability (high temperature and humidity).

COVERAGE

A 1/8" X 1/4" bead will yield approximately 50 linear feet of sealant per 10.1 oz cartridge.

**SURFACE PREPARATION**

All surfaces must be firm and free of dirt, oil, grease, efflorescence, mildew and all loose material. Wire brush unsound masonry for a firm surface. Apply only when sealant and surface temperatures are above 50°F (10°C). To remove mildew, scrub with a solution of 3 heaping teaspoonful of Trisodium Phosphate (TSP), 1 quart of Hypochlorite Household bleach and 3 quarts of warm water (wear protective goggles and impervious gloves. Follow manufacturer's directions when working with cleaning solutions). Rinse thoroughly and allow to dry.

JOINT DESIGN AND DIMENSIONS

Silicone sealants should be no thicker than 3/8" and no thinner than 1/8". The use of a bond breaker prevents three-sided adhesion. Polyethylene or polyurethane foam rods are recommended as back-up materials. If the joint is too shallow to allow foam rod, use a bond breaker tape. The width of building expansion joints varies because of seasonal and daily changes in temperature. The designed joint width must be at least four times the expected thermal movement.

INSTALLATION

SURFACE PREPARATION: Sealant bonding surfaces should be sound, clean, dry and free of contamination. Use isopropyl alcohol wipe to clean surface.

PRIMERS

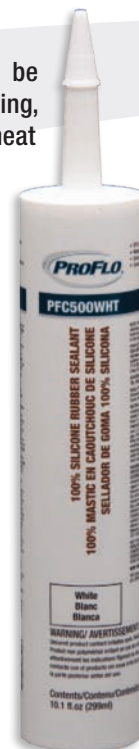
On glass and glazed surfaces, primers are not required. Appropriate primer may be required on plastics and other construction materials for maximum adhesion. It is recommended that a bead of sealant be applied to the substrate material to test adhesion prior to general job use.

MASKING

Areas adjacent to joints should be masked, preferably before priming, if it is necessary to obtain a neat sealant line.

METHOD OF APPLICATION

PROFLO 100% SILICONE SEALANTS can be applied directly from plastic caulking cartridges with handgun or pressure equipment. PROFLO 100% SILICONE SEALANT is supplied as a ready-to-use, one-part sealant with a lightweight consistency. This consistency remains relatively unchanged over a temperature range of -35°F to 140°F (-37°C to 60°C), allowing the sealant to be easily gunned in any season, to clean, dry, frost-free surfaces. While PROFLO 100% SILICONE SEALANT is gunnable at temperatures as low as -35°F, the cure rate will be very slow below 40°F. Additionally, the sealant may not cure to its design properties if cured at temperatures over 100°F.

**PACKAGING**

PROFLO 100% SILICONE SEALANTS sealant is available in 10.1 oz. cartridges. When solvents are used, proper safety precautions must be observed. Maximum recommended pressure for air-operated guns with caulking cartridges is 45 psi (3.2 kgs/cm²).

STORAGE

Do not stock containers below 40°F. Warm to above 50°F prior to use. Storage in direct sunlight or excessive heat will reduce working time and shelf life.

CAUTION!
DO NOT TAKE INTERNALLY.
KEEP OUT OF REACH OF CHILDREN.
KEEP FROM FREEZING.

PFC500 Series

100% Silicone Sealant



LIMITATIONS

- 100% silicone is not paintable
- Not For: Structural Glazing
- Not For: Concrete, Marble, Limestone, Lead, Zinc, or Below Water
- Should not be applied to reflecting, high gloss, or light-colored surfaces where aesthetics are critical, until adequate on-site sealant, surface and ambient atmospheric tests simulating building design are conducted to ascertain material compatibility and migration to adjacent surfaces under actual use conditions.
- Not recommended for mirror installations without the approval of the mirror manufacturer. Typical product data values should not be used as specifications. The use of these adhesive sealants is subject to the following conditions:
- The adhesive sealant is applied in accordance with Good Manufacturing Practice at a thickness not to exceed 6 mm (¼ in.) from an exposed edge.
- As a continuous film between joints acting as a functional barrier between the food and the substrate (area underneath the joint).
- The adhesive sealant must be cured for a minimum of 14 days at 25°C (77°F) and 50% R.H.
- The operating temperature of the adhesive sealant after cure must not exceed 177°C (350°F). All previously mentioned adhesive sealants must be evaluated to determine bond strength for each specific application. If greater adhesion is required, the evaluation of appropriate primer is recommended.

| Typical Properties - Supplied | Test method | PFC500 |
|--|----------------------|-----------------------------------|
| Tooling time | Lab value | 15 min. |
| % solids by weight | Lab value +/- 1% | 100 |
| % solids by volume | Lab value | 100 |
| Viscosity | Semco - 1/8" orifice | 500 grams/min. |
| Specific Gravity (water = 1) | | 1.00 |
| Physical Form | Observation | Paste |
| Color | Observation | White Clear |
| Odor | Subjective | Acetic acid |
| Tack free time in minutes | ASTM D2377 | 30 min. |
| Paint Over Time | | Not Paintable |
| Full Cure Time | | 24 hours |
| Freeze/Thaw Stability | C731 | Will Not Freeze |
| Temperature Application Range | | 40F to 120F |
| Volatile Organic Content Weight % | Calculated | CARB Non-chem curing (n.a) < 3.0% |
| VOC excl. H2O (G/L): | | 36.00 |
| Flash Point | Estimated | > 93 °C; 199 °F |
| Shelf life | | 24 month |
| Typical Properties - Cured | | |
| Joint Movement Capability | | +/-25% |
| Temperature Service Range (after cure) | | -60F to 400F |
| Slump inch. | ASTM D2202 | NONE |
| Durometer hardness | ASTM D2240 | 25 |
| Paintable | | NO |
| Cleanup | | Mineral Spirits |
| Typical Properties (Silicone Only) - Cured | | |
| Tensile Strength | | 213 |
| Elongation | | 328 |



CAUTION!
DO NOT TAKE INTERNALLY.
KEEP OUT OF REACH OF CHILDREN.
KEEP FROM FREEZING.

ALT CODE (OLD)
PFC500CLR (PFL55010)
PFC500WHT (PFL5501)



**XIAMETER(R)**
Material Safety Data Sheet

Page: 1 of 9

Version: 1.7

Revision Date: 2006/01/24

**DAP(R) KITCHEN & BATH MILDEW RESISTANT SILICONE SEALANT WHITE,
8640****1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY**

Dow Corning Corporation
South Saginaw Road
Midland, Michigan 48686

24 Hour Emergency Telephone: (989) 496-5900

Customer Service: (989) 496-6000

Product Disposal Information: (989) 496-6315

CHEMTREC: (800) 424-9300

MSDS No.: 04061388

Revision Date: 2006/01/24

Generic Description: Silicone elastomer

Physical Form: Paste

Color: See product name

Odor: Acetic acid odor

NFPA Profile: Health 2 Flammability 1 Instability/Reactivity 0

Note: NFPA = National Fire Protection Association

2. OSHA HAZARDOUS COMPONENTS

| <u>CAS Number</u> | <u>Wt %</u> | <u>Component Name</u> |
|-------------------|-------------|---|
| PMN871176 | <=7.0 | Dimethyl siloxane, trimethoxysilyl-terminated |
| 64742-46-7 | 5.0 - 10.0 | Hydrotreated middle petroleum distillates |
| 17689-77-9 | 1.0 - 5.0 | Ethyltriacetoxysilane |
| 4253-34-3 | 1.0 - 5.0 | Methyltriacetoxysilane |
| 7429-90-5 | <=1.4 | Aluminum |

The above components are hazardous as defined in 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION**POTENTIAL HEALTH EFFECTS****Acute Effects**

Eye: Direct contact may cause moderate irritation.

Skin: May cause moderate irritation.



XIAMETER(R) Material Safety Data Sheet

Page: 2 of 9

Version: 1.7

Revision Date: 2006/01/24

DAP(R) KITCHEN & BATH MILDEW RESISTANT SILICONE SEALANT WHITE, 8640

Inhalation: Material is not likely to present an inhalation hazard at ambient conditions. However, if material is heated or high vapor/aerosol concentrations are attained, central nervous system depression may occur, which is characterized by drowsiness, dizziness, confusion or loss of coordination.

Oral: May cause vomiting.

Prolonged/Repeated Exposure Effects

Skin: No known applicable information.

Inhalation: No known applicable information.

Oral: No known applicable information.

Signs and Symptoms of Overexposure

No known applicable information.

Medical Conditions Aggravated by Exposure

No known applicable information.

The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar compositions, component data and/or expert review of the product. Please refer to Section 11 for the detailed toxicology information.

4. FIRST AID MEASURES

Eye: Immediately flush with water for 15 minutes. Get medical attention.

Skin: Remove from skin and wash thoroughly with soap and water or waterless cleanser. Get medical attention if irritation or other ill effects develop or persist.

Inhalation: Material is not likely to present an inhalation hazard at ambient conditions. If material is heated or vapor/mist/dust/fumes are generated, care should be taken to prevent inhalation. In case of exposure to vapor/mist/dust/fumes, move to fresh air.

Oral: Get medical attention. Do not induce vomiting.

Comments: Treat according to person's condition and specifics of exposure.

5. FIRE FIGHTING MEASURES

Flash Point: Not applicable.

Autoignition Temperature: Not determined.

Flammability Limits in Air: Not determined.

**XIAMETER(R)
Material Safety Data Sheet**

Page: 3 of 9

Version: 1.7

Revision Date: 2006/01/24

**DAP(R) KITCHEN & BATH MILDEW RESISTANT SILICONE SEALANT WHITE,
8640**

Extinguishing Media: On large fires use dry chemical, foam or water spray. On small fires use carbon dioxide (CO₂), dry chemical or water spray. Water can be used to cool fire exposed containers.

Fire Fighting Measures: Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.

Unusual Fire Hazards: None.

Hazardous Decomposition Products

Thermal breakdown of this product during fire or very high heat conditions may evolve the following hazardous decomposition products: Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde. Iodine compounds. Sulfur oxides. Metal oxides. Nitrogen oxides.

6. ACCIDENTAL RELEASE MEASURES

Containment/Clean up: Observe all personal protection equipment recommendations described in Sections 5 and 8. Wipe up or scrape up and contain for salvage or disposal. Clean area as appropriate since spilled materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbant or cleaning materials appropriately, since spontaneous heating may occur. Local, state and federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which federal, state and local laws and regulations are applicable. Sections 13 and 15 of this MSDS provide information regarding certain federal and state requirements.

Note: See section 8 for Personal Protective Equipment for Spills. Call (989) 496-5900, if additional information is required.

7. HANDLING AND STORAGE

Use with adequate ventilation. Product evolves acetic acid (HOAc) when exposed to water or humid air. Provide ventilation during use to control HOAc within exposure guidelines or use respiratory protection. Avoid eye contact. Avoid skin contact. Do not take internally. Avoid breathing vapor. Keep container closed.

Use reasonable care and store away from oxidizing materials. Keep container closed and store away from water or moisture.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Component Exposure Limits**

| <u>CAS Number</u> | <u>Component Name</u> | <u>Exposure Limits</u> |
|-------------------|---|--|
| 64742-46-7 | Hydrotreated middle petroleum distillates | OSHA PEL (final rule) and ACGIH TLV for oil mists: TWA 5 |

**XIAMETER(R)
Material Safety Data Sheet**

Page: 4 of 9

Version: 1.7

Revision Date: 2006/01/24

**DAP(R) KITCHEN & BATH MILDEW RESISTANT SILICONE SEALANT WHITE,
8640**

mg/m3.

17689-77-9 Ethyltriacetoxysilane

See acetic acid comments.

4253-34-3 Methyltriacetoxysilane

See acetic acid comments.

7429-90-5 Aluminum

OSHA PEL (final rule): TWA 15 mg/m3 total dust, 5 mg/3 respirable dust. ACGIH TLV: TWA 10 mg/m3.

Acetic acid is formed upon contact with water or humid air. Provide adequate ventilation to control exposures within guidelines of OSHA PEL: TWA 10 ppm and ACGIH TLV: TWA 10 ppm, STEL 15 ppm.

Engineering Controls

Local Ventilation: Recommended.

General Ventilation: Recommended.

Personal Protective Equipment for Routine Handling

Eyes: Use proper protection - safety glasses as a minimum.

Skin: Wash at mealtime and end of shift. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves are recommended.

Suitable Gloves: Butyl Rubber. Nitrile Rubber.

Inhalation: Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. IH personnel can assist in judging the adequacy of existing engineering controls.

Suitable Respirator: Respiratory protection is not needed under ambient conditions. If vapor/mist/dust/fumes are generated when material is heated or handled, the following is advised.

Personal Protective Equipment for Spills

Eyes: Use full face respirator.

Skin: Wash at mealtime and end of shift. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves are recommended.

Inhalation/Suitable Respirator: Respiratory protection recommended. Follow OSHA Respirator Regulations (29 CFR 1910.134) and use NIOSH/MHSA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

**XIAMETER(R)
Material Safety Data Sheet**

Page: 5 of 9

Version: 1.7

Revision Date: 2006/01/24

**DAP(R) KITCHEN & BATH MILDEW RESISTANT SILICONE SEALANT WHITE,
8640**

Precautionary Measures: Avoid eye contact. Avoid skin contact. Do not take internally. Avoid breathing vapor. Keep container closed. Use reasonable care.

Comments: Product evolves acetic acid (HOAc) when exposed to water or humid air. Provide ventilation during use to control HOAc within exposure guidelines or use respiratory protection.

When heated to temperatures above 150 C (300 F) in the presence of air, product may form formaldehyde vapors. Physical and health hazard information is readily available from Dow Corning Corporation and the Material Safety Data Sheet.

Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Paste

Color: See product name

Odor: Acetic acid odor

Specific Gravity @ 25°C: 1.007

Viscosity: Not determined.

Freezing/Melting Point: Not determined.

Boiling Point: Not determined.

Vapor Pressure @ 25°C: Not determined.

Vapor Density: Not determined.

Solubility in Water: Not determined.

pH: Not determined.

Volatile Content: Not determined.

Note: The above information is not intended for use in preparing product specifications.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable.

Hazardous Polymerization: Hazardous polymerization will not occur.

Conditions to Avoid: None.

Materials to Avoid: Oxidizing material can cause a reaction. Water, moisture, or humid air can cause hazardous vapors to form as described in Section 8.

11. TOXICOLOGICAL INFORMATION**Special Hazard Information on Components**

No known applicable information.

**XIAMETER(R)**
Material Safety Data Sheet

Page: 6 of 9

Version: 1.7

Revision Date: 2006/01/24

**DAP(R) KITCHEN & BATH MILDEW RESISTANT SILICONE SEALANT WHITE,
8640****12. ECOLOGICAL INFORMATION****Environmental Fate and Distribution**

Complete information is not yet available.

Environmental Effects

Complete information is not yet available.

Fate and Effects in Waste Water Treatment Plants

Complete information is not yet available.

Ecotoxicity Classification Criteria

| Hazard Parameters (LC50 or EC50) | High | Medium | Low |
|----------------------------------|-------|------------------|-------|
| Acute Aquatic Toxicity (mg/L) | <=1 | >1 and <=100 | >100 |
| Acute Terrestrial Toxicity | <=100 | >100 and <= 2000 | >2000 |

This table is adapted from "Environmental Toxicology and Risk Assessment", ASTM STP 1179, p.34, 1993.

This table can be used to classify the ecotoxicity of this product when ecotoxicity data is listed above. Please read the other information presented in the section concerning the overall ecological safety of this material.

13. DISPOSAL CONSIDERATIONS**RCRA Hazard Class (40 CFR 261)**

When a decision is made to discard this material, as received, is it classified as a hazardous waste? No

State or local laws may impose additional regulatory requirements regarding disposal.

Call (989) 496-6315, if additional information is required.

14. TRANSPORT INFORMATION**DOT Road Shipment Information (49 CFR 172.101)**

Not subject to DOT.

Ocean Shipment (IMDG)

Not subject to IMDG code.

Air Shipment (IATA)

Not subject to IATA regulations.

Call Dow Corning Transportation, (989) 496-8577, if additional information is required.

**XIAMETER(R)**
Material Safety Data Sheet

Page: 7 of 9

Version: 1.7

Revision Date: 2006/01/24

**DAP(R) KITCHEN & BATH MILDEW RESISTANT SILICONE SEALANT WHITE,
8640****15. REGULATORY INFORMATION**

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA Status: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

EPA SARA Title III Chemical Listings**Section 302 Extremely Hazardous Substances (40 CFR 355):**

None.

Section 304 CERCLA Hazardous Substances (40 CFR 302):

None.

Section 311/312 Hazard Class (40 CFR 370):

Acute: Yes
Chronic: No
Fire: No
Pressure: No
Reactive: No

Section 313 Toxic Chemicals (40 CFR 372):

| <u>CAS Number</u> | <u>Wt %</u> | <u>Component Name</u> |
|-------------------|-------------|---|
| 69991-68-0 | <=3.0 | Antimony chromium manganese titanium brown rutile |

Supplemental State Compliance Information**California**

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other reproductive harm.

None known.

Massachusetts

| <u>CAS Number</u> | <u>Wt %</u> | <u>Component Name</u> |
|-------------------|-------------|-----------------------|
| 7631-86-9 | 7.0 - 13.0 | Silica, amorphous |
| 1333-86-4 | <=7.0 | Carbon black |



XIAMETER(R) Material Safety Data Sheet

Page: 8 of 9

Version: 1.7

Revision Date: 2006/01/24

DAP(R) KITCHEN & BATH MILDEW RESISTANT SILICONE SEALANT WHITE, 8640

| | | |
|------------|-------|------------------|
| 13463-67-7 | <=6.2 | Titanium dioxide |
|------------|-------|------------------|

| | | |
|-----------|-------|------------|
| 1309-37-1 | <=3.5 | Iron oxide |
|-----------|-------|------------|

| | | |
|-----------|-------|----------|
| 7429-90-5 | <=1.4 | Aluminum |
|-----------|-------|----------|

New Jersey

| <u>CAS Number</u> | <u>Wt %</u> | <u>Component Name</u> |
|-------------------|-------------|---|
| 70131-67-8 | > 60.0 | Dimethyl siloxane, hydroxy-terminated |
| 7631-86-9 | 7.0 - 13.0 | Silica, amorphous |
| 1333-86-4 | <=7.0 | Carbon black |
| PMN871176 | <=7.0 | Dimethyl siloxane, trimethoxysilyl-terminated |
| 1332-37-2 | <=7.0 | Iron oxide |
| 147-14-8 | <=7.0 | Tetrabenzo-5,10,15,20-diazaporphyrinephthalocyanine (Pigment blue 15) |
| 64742-46-7 | 5.0 - 10.0 | Hydrotreated middle petroleum distillates |
| 13463-67-7 | <=6.2 | Titanium dioxide |
| 1309-37-1 | <=3.5 | Iron oxide |
| 69991-68-0 | <=3.0 | Antimony chromium manganese titanium brown rutile |
| 7429-90-5 | <=1.4 | Aluminum |

Pennsylvania

| <u>CAS Number</u> | <u>Wt %</u> | <u>Component Name</u> |
|-------------------|-------------|---|
| 70131-67-8 | > 60.0 | Dimethyl siloxane, hydroxy-terminated |
| 7631-86-9 | 7.0 - 13.0 | Silica, amorphous |
| 1333-86-4 | <=7.0 | Carbon black |
| 147-14-8 | <=7.0 | Tetrabenzo-5,10,15,20-diazaporphyrinephthalocyanine (Pigment blue 15) |
| 1332-37-2 | <=7.0 | Iron oxide |
| PMN871176 | <=7.0 | Dimethyl siloxane, trimethoxysilyl-terminated |



XIAMETER(R) Material Safety Data Sheet

Page: 9 of 9

Version: 1.7

Revision Date: 2006/01/24

DAP(R) KITCHEN & BATH MILDEW RESISTANT SILICONE SEALANT WHITE, 8640

| | | |
|------------|------------|---|
| 64742-46-7 | 5.0 - 10.0 | Hydrotreated middle petroleum distillates |
| 13463-67-7 | <=6.2 | Titanium dioxide |
| 1309-37-1 | <=3.5 | Iron oxide |
| 1317-61-9 | <=3.5 | Black iron oxide |
| 57455-37-5 | <=3.1 | C.I. Pigment Blue 29 |
| 69991-68-0 | <=3.0 | Antimony chromium manganese titanium brown rutile |
| 7429-90-5 | <=1.4 | Aluminum |

16. OTHER INFORMATION

Prepared by: Dow Corning Corporation

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

XIAMETER(R) is a trademark of Dow Corning Corporation

<http://www.xiameter.com>

PROFLO

PFC100WHT

**ACRYLIC LATEX CAULK
MASTIC ACRYLIQUE DE LATEX
MASILLA DE LALEX ACRILICO**

**White
Blanc
Bianca**

WARNING/AVERTISSEMENT:
Sealed product cannot be tested for lead.
Produit scellé ne peut pas être testé pour le plomb.
Please follow all instructions regarding application and disposal.
Suivez toutes les instructions relatives à l'application et à l'élimination du produit.

Contents/Contenu/Conteúdo:
10.1 fl.oz. (296ml)

Contents/Contenu/Conteúdo
16.1 fl.oz (299ml)

Material Safety Data Sheet

24 Hour Emergency Phone Numbers:

Medical: 1-800-327-3874

1-513-558-5111

Transportation:

1-800-535-5053

1-352-323-3500

.....
 •NOTE: National Response Center emergency numbers to be used
 •only in the event of chemical emergencies involving a spill, leak,
 •fire, exposure or accident involving chemicals.

IMPORTANT: Provide this information to employees, customers, and users of this product. Read this MSDS before handling or disposing of this product. This product is covered by the OSHA Hazard Communication Standard and this document has been prepared in accordance with requirements of this standard. All abbreviated terms used in this MSDS are further described in Section 16.

Section 1 - Chemical Product / Company Information

This Material Safety Data Sheet is available in Canadian French and Hispanic American Spanish upon request.
 Esta hoja de datos de la seguridad de los materiales está disponible en francés canadiense y en español a su solicitud.
 Los Datos de Seguridad del Producto pueden obtenerse en Espanol si lo requiere.

Product Name: KWIK SEAL TUB & TILE ADHESIVE CAULK - **Revision Date:** 04/27/2005
 ALL COLORS

Product UPC Number: 18001 18002 18006 18012 18013 18014 18032 **Supercedes:** 08/27/2002
 18034 35026 35028 71018 71023 71040 71050

Product Use/Class: Latex Caulk **MSDS Number:** 00010009001

Manufacturer: **DAP Inc.**
2400 Boston Street Suite 200
Baltimore, MD 21224-4723
888-327-8477 (non-emergency matters)

Section 2 - Composition / Information On Ingredients

| Chemical Name | CASRN | WT% | ACGIH TWA | ACGIH STEL | ACGIH CEIL | OSHA TWA | OSHA STEL | OSHA CEIL | Skin |
|--------------------------------|-----------------|---------|-----------|------------|------------|-------------------------------------|-----------|-----------|------|
| Calcium carbonate | 1317-65-3 | 30-60 | 10 MGM3 | N.E. | N.E. | 5 MGM3 | N.E. | N.E. | No |
| Ester Branched & Linear(C7&C9) | PHTHALATE ESTER | 1-5 | N.E. | N.E. | N.E. | N.E. | N.E. | N.E. | No |
| n-Butyl acetate | 123-86-4 | 0.1-1.0 | 150 PPM | 200 PPM | N.E. | 150 PPM | N.E. | N.E. | No |
| Ethylene glycol | 107-21-1 | 0.1-1.0 | N.E. | N.E. | 100 MGM3 | N.E. | N.E. | N.E. | No |
| Silica, crystalline | 14808-60-7 | 0.1-1.0 | 0.05 MGM3 | N.E. | N.E. | (10 ÷ % SiO ₂) / 2 MGM3 | N.E. | N.E. | No |
| Titanium dioxide | 13463-67-7 | <0.02 | 10 MGM3 | N.E. | N.E. | 15 MGM3 | N.E. | N.E. | No |
| Formaldehyde | 50-00-0 | <0.03 | N.E. | N.E. | 0.3 PPM | 0.75 PPM | 2 PPM | N.E. | No |
| Ethyl acrylate | 140-88-5 | <0.009 | 5 PPM | 15 PPM | N.E. | 25 PPM | N.E. | N.E. | Yes |
| Acetaldehyde | 75-07-0 | <0.002 | N.E. | N.E. | 25 PPM | 200 PPM | N.E. | N.E. | No |
| Acrylonitrile | 107-13-1 | <0.0003 | 2 PPM | N.E. | N.E. | 2 PPM | 10 PPM | N.E. | Yes |

Exposure Notes:

50-00-0 Formaldehyde is a specially regulated substance for which an OSHA chemical-specific exposure standard exists. Detailed information regarding this substance may be found in 29 CFR 1910.1048. Medical surveillance information regarding this substance may be found in Appendix C to

29 CFR 1910.1048.

107-13-1 Acrylonitrile is a specially regulated substance for which an OSHA chemical-specific exposure standard exists. Detailed information regarding this substance may be found in 29 CFR 1910.1045. Medical surveillance information regarding this substance may be found in Appendix C to 29 CFR 1910.1045.

Important: Listed Permissible Exposure Levels (PEL) are from the U.S. Dept. of Labor OSHA Final Rule Limits (CFR 29 1910.1000); these limits may vary between states.

Note: An employee's skin exposure to substances having a "YES" in the "SKIN" column in the table above shall be prevented or reduced to the extent necessary under the circumstances through the use of gloves, coveralls, goggles or other appropriate personal protective equipment, engineering controls or work practices

Section 3 - Hazards Identification

Emergency Overview: A colored paste with a very slight ammonia odor. WARNING! Harmful if swallowed or absorbed through the skin. May cause eye, skin, nose, throat and respiratory tract irritation. This product contains ethylene glycol.

Refer to other MSDS sections for other detailed information.

Effects Of Overexposure - Eye Contact: May cause eye irritation.

Effects Of Overexposure - Skin Contact: Harmful if absorbed through the skin. May cause sensitization by skin contact. May cause skin irritation and/or dermatitis.

Effects Of Overexposure - Inhalation: Harmful if inhaled. Prolonged, repeated, or high exposures may cause weakness and depression of the central nervous system. May cause irritation of respiratory tract. Inhalation of vapors may cause irritation of the nose, throat, lungs and respiratory tract.

Effects Of Overexposure - Ingestion: Harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: Prolonged and repeated skin contact may cause irritation and possibly dermatitis. Repeated or prolonged exposure may cause respiratory system damage. Overexposure may cause kidney, cardiovascular, skin and liver damage.

Formaldehyde vapor is a known animal carcinogen according to OSHA and NTP and is considered possibly carcinogenic to humans by inhalation. The International Agency for Research on Cancer considers formaldehyde to be a human carcinogen.

Ethylene Glycol may cause kidney and liver damage upon prolonged and repeated overexposures. Studies have shown that repeated inhalation of ethylene glycol has produced adverse cardiovascular changes in laboratory animals. Ethylene glycol has been shown to cause birth defects in laboratory animals.

Primary Route(s) Of Entry: Skin Contact, Inhalation, Eye Contact

Medical Conditions which May be Aggravated by Exposure: None known.

Section 4 - First Aid Measures

First Aid - Eye Contact: In case of contact, immediately flush eyes with large quantities of water for at least 15 minutes until irritation subsides. Get medical attention immediately.

First Aid - Skin Contact: Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical aid if symptoms persist. Remove and wash contaminated clothing.

First Aid - Inhalation: If inhaled, remove to fresh air. If breathing is difficult, leave the area to obtain fresh air. If continued breathing difficulty is experienced, get medical attention immediately.

First Aid - Ingestion: If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately.

Note to Physician: None.

COMMENTS: Call Medical Emergency at 1-800-327-3874 if any irritation or complication arises from any of the above routes of entry.

Section 5 - Fire Fighting Measures

Flash Point, F: > 200 F

Method: (Seta Closed Cup)

Lower Explosive Limit, %: Not Established

Upper Explosive Limit, %: Not Established

Extinguishing Media: Carbon Dioxide, Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: No special protective measures against fire required.

Special Firefighting Procedures: Wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear. Use water spray to cool exposed surfaces.

Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Wear proper protective equipment as specified in Section 8. Use absorbent material or scrape up dried material and place in container.

Section 7 - Handling And Storage

Handling: KEEP OUT OF REACH OF CHILDREN! DO NOT TAKE INTERNALLY. Do not breathe vapors. Use only with adequate ventilation. Wash thoroughly after handling. Avoid breathing vapor and contact with eyes, skin and clothing. Open all windows and doors or use other means to ensure cross-ventilation and fresh air entry during application and drying. Odor is not an adequate warning for hazardous conditions.

Storage: Close container after each use. Store containers away from excessive heat and freezing. Store away from caustics and oxidizers. Do not store at temperatures above 120 degrees F.

Section 8 - Exposure Controls / Personal Protection

Precautionary Measures: Please refer to other sections and subsections of this MSDS.

Engineering Controls: Good general ventilation should be sufficient to control airborne levels. Ensure adequate ventilation, especially in confined areas. Local ventilation of emission sources may be necessary to maintain ambient concentrations below recommended exposure limits.

Respiratory Protection: In case of insufficient ventilation, wear suitable respiratory equipment. A NIOSH-approved air purifying respirator with an organic vapor cartridge or canister may be necessary under certain circumstances where airborne concentrations are expected to exceed exposure limits. A respiratory protection program that meets the OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace

conditions warrant a respirator's use.

Skin Protection: Rubber gloves.

Eye Protection: Goggles or safety glasses with side shields.

Other protective equipment: Not required under normal use.

Hygienic Practices: Wash hands before breaks and at the end of workday. Remove and wash contaminated clothing before re-use.

Section 9 - Physical And Chemical Properties

| | | | |
|---------------------------|---------------------|--------------------------|-----------------------------|
| Boiling Range: | 210 - 220 F | Vapor Density: | Heavier Than Air |
| Odor: | Very Slight Ammonia | Odor Threshold: | Not Established |
| Appearance: | Colored | Evaporation Rate: | Slower Than n-Butyl Acetate |
| Solubility in H2O: | Not Established | Specific Gravity: | 1.58 |
| Freeze Point: | Not Established | pH: | Between 7.0 and 12.0 |
| Vapor Pressure: | Not Established | Viscosity: | Not Established |
| Physical State: | Paste | | |

When reported, vapor pressure of this product has been calculated theoretically based on its constituent makeup and has not been determined experimentally.

(See section 16 for abbreviation legend)

Section 10 - Stability And Reactivity

Conditions To Avoid: Excessive heat and freezing.

Incompatibility: Incompatible with strong bases and oxidizing agents.

Hazardous Decomposition Products: Normal decomposition products, i.e., COx, NOx.

Hazardous Polymerization: Hazardous polymerization will not occur under normal conditions.

Stability: Stable under recommended storage conditions.

Section 11 - Toxicological Information

Product LD50: Not Established

Product LC50: Not Established

| CASRN | Chemical Name | LD50 | LC50 | WT% |
|--------------------|--------------------------------|--------------------|------------------|---------|
| PHthalate ESTER | Ester Branched & Linear(C7&C9) | Oral Rat: 10 mg/kg | ----- | 1-5 |
| 123-86-4 | n-Butyl acetate | Rat:10768 MG/KG | Rat:2000 P | 0.1-1.0 |
| 107-21-1 | Ethylene glycol | Rat:4700 mg/kg | Rat:10876 mg/kg | 0.1-1.0 |
| 7664-41-7 | Ammonia | ----- | Rat:2000 ppm/4H | <0.05 |
| 50-00-0 | Formaldehyde | ----- | Rat:203 mg/m3 | <0.03 |
| 140-88-5 | Ethyl acrylate | ----- | Rat:1414 ppm/4H | <0.009 |
| 75-07-0 | Acetaldehyde | ----- | Rat:13300 ppm/4H | <0.002 |
| 107-13-1 | Acrylonitrile | Oral Rat:78 mg/kg | Rat:425 ppm/4H | <0.0003 |

Carcinogenicity:

| CAS No. | Chemical Name | ACGIH | OSHA | IARC | NTP | WT% |
|------------|---------------------|-----------------|-------|-------|-------------------|---------|
| 14808-60-7 | Silica, crystalline | Suspected human | ----- | ----- | Known carcinogen. | 0.1-1.0 |

| | | | | | | |
|----------|----------------|---|--------------------------|----------------------|-------------------------|---------|
| | | carcinogen. | | | | |
| 50-00-0 | Formaldehyde | Suspected human carcinogen. | Potential cancer hazard. | Human carcinogen. | Anticipated carcinogen. | <0.03 |
| 140-88-5 | Ethyl acrylate | ----- | ----- | Possible carcinogen. | ----- | <0.009 |
| 75-07-0 | Acetaldehyde | Confirmed animal carcinogen with unknown relevance to humans. | ----- | Possible carcinogen. | Anticipated carcinogen. | <0.002 |
| 107-13-1 | Acrylonitrile | Confirmed animal carcinogen with unknown relevance to humans. | Cancer hazard. | Possible carcinogen. | Anticipated carcinogen. | <0.0003 |
| 79-06-1 | Acrylamide | Confirmed animal carcinogen with unknown relevance to humans. | ----- | Probable carcinogen. | Anticipated carcinogen. | <0.0009 |

Significant Data with Possible Relevance to Humans: This product contains trace amounts of free formaldehyde. OSHA and NTP identify formaldehyde as a potential carcinogen. IARC identifies formaldehyde as a human carcinogen. Formaldehyde has been shown to cause mutations in a variety of in-vitro test systems, the significance of which to humans is unknown. In a two-year inhalation study, rats showed carcinogenic effects in the respiratory system at 15 ppm of formaldehyde. There should be minimal risk when used with ventilation adequate to keep the atmospheric concentration of formaldehyde below the recommended exposure limits. Maintain adequate ventilation to prevent exposure above current OSHA / ACGIH exposure limits. Workplace monitoring of the air to define formaldehyde exposure levels may be necessary. This product contains trace amounts of acrylonitrile. It is exempt from the OSHA acrylonitrile standard 29 CFR 1910.1045, paragraph (a) (2) (ii). Acrylonitrile has been classified by IARC as possibly carcinogenic to humans, by OSHA as carcinogenic and by NTP as reasonably anticipated to be a human carcinogen.

Section 12 - Ecological Information

Ecological Information: Ecological injuries are not known or expected under normal use.

Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance with all federal, state and local regulations. State and Local regulations/restrictions are complex and may differ from Federal regulations. Responsibility for proper waste disposal is with the owner of the waste.

EPA Waste Code if Discarded (40 CFR Section 261): This product does not meet the definition of a hazardous waste according to U.S. EPA Hazardous Waste Management Regulation, 40 CFR Section 261.

Section 14 - Transportation Information

| | | | |
|----------------------------------|---------------|--------------------------|------|
| DOT Proper Shipping Name: | Not Regulated | Packing Group: | N.A. |
| DOT Technical Name: | N.A. | Hazard Subclass: | N.A. |
| DOT Hazard Class: | N.A. | DOT UN/NA Number: | None |

Note: The shipping information provided is applicable for domestic ground transport only. Different categorization may apply if shipped via other modes of transportation and/or to non-domestic destinations.

Section 15 - Regulatory Information

CERCLA - SARA Hazard Category:

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under

applicable definitions, to meet the following categories:

Immediate Health Hazard, Chronic Health Hazard

SARA Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

| Chemical Name | CAS Number | WT% |
|-----------------|------------|---------|
| Ethylene glycol | 107-21-1 | 0.1-1.0 |

Toxic Substances Control Act:

All ingredients in this product are either on TSCA inventory list, or otherwise exempt.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

| Chemical Name | CAS Number | WT% |
|---------------------------------|------------|-------|
| 2-Methyl-4-isothiazolin-3-one | 2682-20-4 | Trace |
| 5-Chloro-2-methyl-4-isothiazoli | 26172-55-4 | Trace |

U.S. State Regulations

New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product:

| Chemical Name | CAS Number | WT% |
|---------------------------------------|-------------|-------|
| Water | 7732-18-5 | 10-30 |
| Acrylic Polymer (TRRN – 618608-5059P) | Proprietary | 10-30 |

Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%:

| Chemical Name | CAS Number | WT% |
|---------------------------------------|-------------|-------|
| Water | 7732-18-5 | 10-30 |
| Acrylic Polymer (TRRN – 618608-5059P) | Proprietary | 10-30 |

California Proposition 65:

Warning: The following ingredients present in the product are known to the State of California to cause cancer:

| Chemical Name | CAS Number | Definition | Date Listed | WT% |
|---------------------|------------|---------------|-------------------------|---------|
| Silica, crystalline | 14808-60-7 | Carcinogenic. | Listed: October 1, 1988 | 0.1-1.0 |
| Formaldehyde | 50-00-0 | Carcinogenic. | Listed: January 1, 1988 | <0.03 |
| Ethyl acrylate | 140-88-5 | Carcinogenic. | Listed: July 1, 1989 | <0.009 |

| | | | | |
|---------------|----------|---------------|-------------------------|---------|
| Acetaldehyde | 75-07-0 | Carcinogenic. | Listed: April 1, 1988 | <0.002 |
| Acrylonitrile | 107-13-1 | Carcinogenic. | Listed: July 1, 1987 | <0.0003 |
| Acrylamide | 79-06-1 | Carcinogenic. | Listed: January 1, 1990 | <0.0009 |

Warning: The following ingredients present in the product are known to the State of California to cause birth defects or other reproductive harm:

None

Section 16 - Other Information

HMIS Ratings:

Health: 1 Flammability: 1 Reactivity: 0 Personal Protection: X

VOLATILE ORGANIC COMPOUNDS, GR/LTR: 25.1 LB/GAL: 0.2 WT%: 1.04

REASON FOR REVISION: Periodic Update

Legend:

| | |
|-----------------------------------|---|
| N.A. – Not Applicable | ACGIH – American Conference of Governmental Industrial Hygienists |
| N.E. – Not Established | SARA – Superfund Amendments and Reauthorization Act of 1986 |
| N.D. – Not Determined | NJRTK – New Jersey Right-to-Know Law |
| VOC – Volatile Organic Compound | OSHA – Occupational Safety and Health Administration |
| PEL – Permissible Exposure Limit | HMIS – Hazardous Materials Identification System |
| TLV – Threshold Limit Value | NTP – National Toxicology Program |
| STEL – Short Term Exposure Limit | CEIL – Ceiling Exposure Limit |
| LD50 – Lethal Dose 50 | LC50 – Lethal Concentration 50 |
| F – Degree Fahrenheit | C – Degree Celsius |
| MSDS – Material Safety Data Sheet | CASRN – The Chemical Abstracts Service Registry Number |

DAP believes the data and statements contained herein are accurate as of the date hereof. They are offered in good faith as typical values and not as a product specification. **NO WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE WITH REGARD TO THE INFORMATION HEREIN PROVIDED OR THE PRODUCT TO WHICH THE INFORMATION REFERS.** Since this document is intended only as a guide to the appropriate use and precautionary handling of the referenced product by a properly trained person, it is therefore the responsibility of the user to (i) review the recommendations with due consideration for the specific context of the intended use and (ii) determine if they are appropriate.

<End of MSDS>

Hoja de datos de la seguridad de los materiales

Números telefónicos de emergencia las 24 horas:
Emergencias médicas: 1-800-327-3874
1-513-558-5111
Transporte:
1-800-535-5053
1-352-323-3500

NOTA: Los números de emergencia del Centro de Respuesta Nacional sólo se deben usar en caso de emergencias químicas que involucren un derramamiento, incendio, exposición o accidente que tengan que ver con químicos

IMPORTANTE: Lea esta hoja de datos de la seguridad de los materiales antes de manipular o desechar este producto, y entregue esta información a los empleados, clientes y usuarios de este producto. Este producto está cubierto por la norma de comunicación de riesgos OSHA, y este documento fue preparado de acuerdo con los requisitos de dicha norma. Todos los términos abreviados utilizados en este documento se describen con más detalles en la sección 16.

Sección 1 - Información del producto químico/ compañía

Esta hoja de datos de la seguridad de los materiales está disponible en francés canadiense y en español a su solicitud.
On peut demander cette MSDS a la langue Francaise Canadienne.

| | | | |
|------------------------------------|---|--|-------------|
| Nombre de producto: | SellaCil KWIK SEAL Sellante Adhesivo para Baneras y Azulejos | Fecha de revisión: | 05/09/2005 |
| Número de UPC del producto: | 18001 18002 18006 18012 18013 18014 18032 18034 35026 35028 71018 71023 71040 71050 | Reemplaza a: | 08/27/2002 |
| Uso/ clase del producto: | Calafateo de Latex | Número de hoja de datos (MSDS): | 00010009001 |
| Fabricante: | DAP Inc. 2400 Boston Street Suite 200 Baltimore, MD 21224-4723 888-327-8477 (asuntos de no emergencia) | | |

Sección 2 - Composición / Información sobre los Ingredientes

| Nombre Químico | CASRN | Peso% | ACGIH TWA | ACGIH STEL | ACGIH CEIL | OSHA TWA | OSHA STEL | OSHA CEIL | Piel |
|--------------------------------------|-----------------|---------|-----------|------------|------------|------------------------|-----------|-----------|------|
| Carbonatodecalcio | 1317-65-3 | 30-60 | 10 MGM3 | N.E. | N.E. | 5 MGM3 | N.E. | N.E. | No |
| Di(C7, C9) Ester ramificado & Lineal | PHTHALATE ESTER | 1-5 | N.E. | N.E. | N.E. | N.E. | N.E. | N.E. | No |
| Ester N - Butilico | 123-86-4 | 0.1-1.0 | 150 PPM | 200 PPM | N.E. | 150 PPM | N.E. | N.E. | No |
| Etilen Glicol | 107-21-1 | 0.1-1.0 | N.E. | N.E. | 100 MGM3 | N.E. | N.E. | N.E. | No |
| Silicicristalina | 14808-60-7 | 0.1-1.0 | 0.05 MGM3 | N.E. | N.E. | (10 ÷ % SiO2) / 2 MGM3 | N.E. | N.E. | No |
| Formaldehido | 50-00-0 | <0.03 | N.E. | N.E. | 0.3 PPM | 0.75 PPM | 2 PPM | N.E. | No |
| Dioxidodetitanio | 13463-67-7 | <0.02 | 10 MGM3 | N.E. | N.E. | 15 MGM3 | N.E. | N.E. | No |
| Ester Etilico Del Acido 2-Propenoico | 140-88-5 | <0.009 | 5 PPM | 15 PPM | N.E. | 25 PPM | N.E. | N.E. | Sí |
| Aldehídoacético | 75-07-0 | <0.002 | N.E. | N.E. | 25 PPM | 200 PPM | N.E. | N.E. | No |
| Cianuro De Vinilo | 107-13-1 | <0.0003 | 2 PPM | N.E. | N.E. | 2 PPM | 10 PPM | N.E. | Sí |

Notas sobre la exposición:

50-00-0 Formaldehido es una sustancia especialmente regulada para la cual existe una norma OSHA para la exposición a un químico específico. La información detallada respecto a esta sustancia se encuentra en 29 CFR 1910.1048. La información respecto a la vigilancia médica para esta sustancia se puede encontrar en el apéndice C de 29 CFR 1910.1048.

107-13-1 Acrylonitrile es una sustancia especialmente regulada para la cual existe una norma OSHA para la exposición a un químico específico. La información detallada respecto a esta sustancia se encuentra en 29 CFR 1910.1045. La información respecto a la vigilancia médica para esta sustancia se puede encontrar en el apéndice C de 29 CFR 1910.1045.

Importante: Los niveles de exposición permitidos (PEL) señalados son suministrados por el Dept. del Trabajo de EE.UU., Límites de la norma final OSHA (CFR 29 1910.1000); Estos límites pueden variar de estado a estado.

Nota: Se debe evitar o reducir al máximo la exposición de la piel de un empleado a sustancias que tengan "S í" en la columna "PIEL" en la tabla anterior, según lo permitan las circunstancias mediante el uso de guantes, ropa de protección, gafas de seguridad y otros equipos personales de protección, controles de ingeniería o prácticas de trabajo.

Sección 3 - Identificación de riesgos

Generalidades sobre las emergencias: Un coloró pasta con una olor muy leve del amoniaco.
¡ADVERTENCIA! Es dañino si se traga o absorbe por la piel. Podría causar irritación de los ojos, piel, nariz, garganta y tracto respiratorio. Este producto contiene glicol de etileno.

Consulte otras secciones de la hoja de datos de seguridad de los materiales para más información detallada.

Efectos de la sobre exposición - Contacto visual: Podría causar irritación a los ojos.

Efectos de la sobre exposición - Contacto de la piel: Dañino si se absorbe por la piel. Posibilidad de sensibilización en contacto con la piel. Puede causar irritaciones en la piel y/o dermatitis.

Efectos de la sobre exposición - Inhalación: Es dañino si se inhala. Las exposiciones prolongadas, repetidas o elevadas pueden causar debilidad y depresión del sistema nervioso central. Puede producir irritaciones en el sistema respiratorio. La inhalación de vapores puede causar irritación de la nariz, garganta, pulmones y tracto respiratorio.

Efectos de la sobre exposición - Ingestión: Dañino si se traga.

Efectos de la sobre exposición - Riesgos crónicos: El contacto prolongado y repetido de la piel podría causar irritación y posiblemente dermatitis. La exposición repetida o prolongada podría causar daños al sistema respiratorio. La sobre exposición podría causar daños cardiovasculares y en los riñones, piel e hígado.

El vapor del formaldehído es un cancerígeno animal conocido según OSHA y NTP y se considera posiblemente cancerígeno a humanos por aspiración. La Agencia Internacional para la Investigación en el Cáncer considera formaldehído para ser un cancerígeno humano.

El glicol de etileno puede causar daño al riñón e hígado con la sobre exposición prolongada y repetida. Los estudios han demostrado que la inhalación repetida al glicol de etileno ha producido cambios cardiovasculares adversos en los animales de laboratorio. Se ha demostrado que el glicol de etileno causa defectos de nacimiento en animales de laboratorio.

Ruta(s) principal de entrada: Piel el Contacto, Aspiración, Ojo el Contacto

Condiciones médicas que se pueden agravar a causa de la exposición: Ninguno conocido.

Sección 4 - Medidas de primeros auxilios

Primeros auxilios - Contacto visual: En caso de contacto, enjuague los ojos de inmediato con grandes cantidades de agua por al menos 15 minutos hasta que la irritación ceda. Obtenga atención médica de inmediato.

Primeros auxilios - Contacto de la piel: Lávese inmediatamente con jabón y agua abundante por lo menos durante 15 minutos. Obtenga ayuda médica si los síntomas persisten. Retire y lave la ropa contaminada.

Primeros auxilios - Inhalación: Si se inhala, salga al aire fresco. Si se dificulta la respiración, abandone el área para obtener aire fresco. Si se experimenta dificultad continua para respirar, busque atención médica de inmediato.

Primeros auxilios - Ingestión: Si se traga, NO PROVOQUE EL VÓMITO. Obtenga atención médica de inmediato.

Nota para el médico: Sin información

COMENTARIOS: Llame para emergencias médicas al 1-800-327-3874 si surgiera cualquier irritación o complicación de cualquiera de las rutas de entrada anteriores.

Sección 5 - Medidas para combatir incendios

Punto de inflamación, F: > 200 F
Método: (Seta Cerró Copa)

Límite explosivo menor, %: No Establecido
Límite explosivo mayor, %: No Establecido

Medios para extinguir: Bióxido de carbono, Seque Sustancia Química, Espuma, Riegue Niebla

Riesgos inusuales de incendio y explosión: No se requieren medidas de protección especiales contra el fuego.

Procedimientos especiales para combatir incendios: Use un aparato para respiración auto-contenida con demanda de presión (aprobado por el Instituto NIOSH o equivalente) y equipo completo de protección. Use rociador de agua para enfriar las superficies expuestas.

Sección 6 - Medidas en caso de emisión accidental

Pasos a seguir en el caso de emisión o derramamiento de materiales: Use el equipo de protección correcto según lo especifica la Sección 8. Use material absorbente o raspe el material seco y coloque en un contenedor.

Sección 7 - Manejo y almacenamiento

Manejo: ¡MANTENGA LEJOS DEL ALCANCE DE LOS NIÑOS! NO TOME INTERNAMENTE. No respire los vapores. Use únicamente con ventilación adecuada. Lave a fondo después de manipular. Evitar respirar los vapores y el contacto con los ojos, la piel y la ropa. Abra todas las ventanas y puertas o use otro medios para garantizar una ventilación cruzada y la entrada de aire fresco durante la aplicación y el secado. Sentir el olor no es una advertencia adecuada de condiciones peligrosas.

Almacenamiento: Cierre el contenedor después de cada uso. Almacene los contenedores lejos del calor y congelamiento excesivos. Almacene lejos de sustancias cáusticas y oxidantes. No almacene a temperaturas por encima de 120 grados F.

Sección 8 - Controles de la exposición/ Protección personal

Medidas de precaución: Refiérase por favor a otras secciones y subdivisiones de este MSDS.

Controles de ingeniería: Una buena ventilación general debería ser suficiente para controlar los niveles de transporte por el aire. Asegurarse de una ventilación adecuada, especialmente en locales cerrados. Puede ser necesaria la ventilación local de las fuentes de emisión para mantener las concentraciones ambientales por debajo de los límites de exposición recomendados.

Protección respiratoria: En caso de ventilación insuficiente, use equipo respiratorio adecuado. Un respirador para purificar el aire, aprobado por el NIOSH con cartucho de vapor orgánico podría ser necesario bajo ciertas circunstancias donde se espera que las concentraciones de transporte por el aire superen los límites de exposición. Se debe seguir un programa de protección respiratoria que cumpla con los requisitos de OSHA 1910.134 y ANSI Z88.2 cada vez que las condiciones del lugar de trabajo exijan el uso de un respirador.

Protección de la piel: guantes de goma

Protección de la visión: Gafas de seguridad con protectores laterales.

Otro equipo de protección: no se precisa en el uso normal.

Prácticas higiénicas: Lávense las manos antes de los descansos y después de terminar la jornada laboral. Quitar y lavar la ropa contaminada antes de reutilizar.

Sección 9 - Propiedades físicas y químicas

| | | | |
|---------------------------------------|-------------------|-------------------------------|-----------------------------------|
| Rango de ebullición: | 210 - 220 F | Densidad del vapor: | Más pesado Que Aéreo |
| Olor: | Amoníaco muy Leve | Umbral de olor: | No Establecido |
| Aspecto: | Coloró | Índice de evaporación: | Más lento Que Acetato de N-butilo |
| Solubilidad en H₂O: | No Establecido | Gravedad específica: | 1.579 |
| Punto de congelamiento: | No Establecido | pH: | Entre 7,0 y 12,0 |
| Presión del vapor: | No Establecido | Viscosidad: | No Establecido |
| Estado físico: | Pasta | | |

(Ver sección 16 para la leyenda de las abreviaturas)

Sección 10 - Estabilidad y reactividad

Condiciones a evitar: Calentamiento y congelamiento excesivos.

Incompatibilidad: Incompatible con bases fuertes y agentes oxidantes.

Productos de descomposición peligrosa: Productos de descomposición normal, es decir, CO_x, NO_x.

Polimerización peligrosa: No ocurrirá polimerización peligrosa bajo condiciones normales.

Estabilidad: Estable bajo las condiciones de almacenamiento recomendadas.

Sección 11 - Información toxicológica

LD50 del producto: No Establecido

LC50 del producto: No Establecido

| CASRN | Nombre Químico | LD50 | LC50 | Peso% |
|-----------------|--------------------------------------|--------------------|-----------------|---------|
| PHthalate Ester | Di(C7, C9) Ester ramificado & Lineal | Oral Rat: 10 mg/kg | ----- | 1-5 |
| 123-86-4 | Ester N - Butilico | Rat:10768 MG/KG | Rat:2000 P | 0.1-1.0 |
| 107-21-1 | Etilen Glicol | Rat:4700 mg/kg | Rat:10876 mg/kg | 0.1-1.0 |
| 7664-41-7 | Trihidruro De Nitrogeno | ----- | Rat:2000 ppm/4H | <0.05 |
| 50-00-0 | Formaldehido | ----- | Rat:203 mg/m3 | <0.03 |

| | | | | |
|----------|--------------------------------------|-------------------|------------------|---------|
| 140-88-5 | Ester Etilico Del Acido 2-Propenoico | ----- | Rat:1414 ppm/4H | <0.009 |
| 75-07-0 | Aldehídoacético | ----- | Rat:13300 ppm/4H | <0.002 |
| 107-13-1 | Cianuro De Vinilo | Oral Rat:78 mg/kg | Rat:425 ppm/4H | <0.0003 |

Carcinogenicidad:

| Número CAS | Nombre Químico | ACGIH | OSHA | IARC | NTP | Peso% |
|------------|--------------------------------------|---|------------------------------|-----------------------|-------------------------|---------|
| 14808-60-7 | Silicicristalina | Cancerígeno humano sospechado. | ----- | Cancerígeno humano. | Cancerígeno conocido. | 0.1-1.0 |
| 50-00-0 | Formaldehído | Cancerígeno humano sospechado. | Peligro potencial de cancer. | Cancerígeno humano. | Cancerígeno anticipado. | <0.03 |
| 140-88-5 | Ester Etilico Del Acido 2-Propenoico | ----- | ----- | Cancerígeno posible. | ----- | <0.009 |
| 75-07-0 | Aldehídoacético | Cancerígeno animal confirmado con la aplicabilidad desconocida a humanos. | ----- | Cancerígeno posible. | Cancerígeno anticipado. | <0.002 |
| 79-06-1 | Acrilamida | Cancerígeno animal confirmado con la aplicabilidad desconocida a humanos. | ----- | Cancerígeno probable. | Cancerígeno anticipado. | <0.0009 |
| 107-13-1 | Cianuro De Vinilo | Cancerígeno animal confirmado con la aplicabilidad desconocida a humanos. | Peligro de cancer. | Cancerígeno posible. | Cancerígeno anticipado. | <0.0003 |

Datos significativos con posible relevancia para los humanos: Este producto contiene las cantidades de la huella de formaldehído libre. OSHA y NTP identifican formaldehído como un cancerígeno potencial. IARC identifica formaldehído como un cancerígeno humano. El formaldehído se ha mostrado para causar mutaciones en una variedad de en-vitros sistemas de la prueba, el significado de que a humanos es desconocido. En un estudio de inhalación con ratas durante dos años se observaron efectos cancerígenos en el sistema respiratorio con una concentración de 15 PPM de formaldehído. El riesgo debe ser mínimo al usarse con ventilación adecuada para mantener la concentración atmosférica del formaldehído por debajo de los límites de exposición recomendados.

Mantenga ventilación adecuada para evitar la exposición por encima de los límites actuales de OSHA / ACGIH. Podría ser necesario el monitoreo en el lugar de trabajo del aire para definir los niveles de exposición al formaldehído. Este producto contiene rastros de acrilonitrilo. Está exento del estándar OSHA acrilonitrilo 29 CFR 1910.1045, parágrafo (a) (2) (ii). El acrilonitrilo está clasificado por la IARC como posiblemente carcinogénico para humanos, por la agencia OSHA como carcinogénico y por la NTP como carcinógeno humano con anticipación razonable.

Sección 12 - Información ecológica

Información ecológica: No se conocen ni esperan daños ecológicos bajo uso normal.

Sección 13 - Información sobre desechos

Información sobre desechos: Deseche los materiales de acuerdo con todas las normas federales, estatales y locales. Las normas/ restricciones estatales y locales son complejas y pueden diferir de las normas federales. La responsabilidad de eliminar los desechos correctamente recae en el propietario de los desechos.

Código de desechos de EPA en caso de desecho (CFR 40 Sección 261): Este producto no encuentra definición de un desecho peligroso según EE.UU. EPA Regulación Peligrosa del tratamiento de desechos, 40 Sección CFR 261.

Sección 14 - Información sobre transporte

Nombre correcto para envío a No Regulado DOT:
Nombre técnico para DOT: No Aplicable
Clase de riesgo para DOT: No Aplicable

Grupo de empaque: No Aplicable
Sub-clase de riesgo: No Aplicable
Número UN/NA para DOT: Ninguno

Nota: La información del envío proporcionada es aplicable para el transporte doméstico del suelo sólo. Categorización diferente puede aplicar si enviado vía otros modos del transporte y/o a destino no-domésticos.

Sección 15 - Información reglamentaria

Categoría de riesgo CERCLA - SARA:

Este producto ha sido revisado según las categorías de riesgo de EPA promulgadas según las secciones 311 y 312 de la Ley de enmienda y reautorización de fondos especiales de 1986 (SARA, por sus iniciales en inglés, Título III) y se considera, según las definiciones correspondientes, que cumple con las siguientes categorías:

PELIGRO DE SALUD INMEDIATO, PELIGRO DE SALUD CRONICO

Sección 313 de la ley SARA:

Este producto contiene las siguientes sustancias sujeto a los requisitos de reporte de la sección 313 del título III de la ley SARA de 1986 y 40 CFR parte 372:

| Nombre Químico | Número CAS | Peso% |
|----------------|------------|---------|
| Etilen Glicol | 107-21-1 | 0.1-1.0 |

Ley para el control de sustancias tóxicas:

Todos ingredientes en este producto son o en lista de inventario de TSCA, o de otro modo exima.

Este producto contiene las siguientes sustancias químicas de acuerdo con los requisitos de reporte de la ley TSCA 12(B) si es exportado desde los Estados Unidos:

| Nombre Químico | Número CAS | Peso% |
|--------------------------------|------------|-------|
| 2-Methyl-4-Isothiazolin-3-One | 2682-20-4 | |
| 5-Chloro-2-Methyl-4-Isothazoli | 26172-55-4 | |

Regulaciones estatales de EE.UU.:

Ley del Derecho a saber de New Jersey:

Los siguientes materiales no representan peligro, pero están entre los primeros cinco componentes de este producto:

| Nombre Químico | Número CAS | Peso% |
|-------------------------------------|-------------|-------|
| Agua | 7732-18-5 | 10-30 |
| C.A. De Eth Acr,2Ethhex,Acr, Meth N | Propietario | 10-30 |

Ley del Derecho a saber de Pennsylvania:

Los siguientes ingredientes no peligrosos están presentes en el producto en una proporción mayor a 3%:

| | | |
|--|--|--|
| | | |
|--|--|--|

| Nombre Químico | Número CAS | Peso% |
|---------------------------------------|-------------|-------|
| Agua | 7732-18-5 | 10-30 |
| C.A. De Eth Acr, 2Ethhex, Acr, Meth N | Propietario | 10-30 |

Propuesta 65 de California:

Advertencia: Los siguientes ingredientes presentes en el producto son conocidos para el Estado de California por causar cáncer:

| Nombre Químico | Número CAS | Definición | Fecha Listó | Peso% |
|--------------------------------------|------------|--------------|-------------------------|---------|
| Silicecristalina | 14808-60-7 | Cancerígeno. | Listed: October 1, 1988 | 0.1-1.0 |
| Formaldehído | 50-00-0 | Cancerígeno. | Listed: January 1, 1988 | <0.03 |
| Ester Etilico Del Acido 2-Propenoico | 140-88-5 | Cancerígeno. | Listed: July 1, 1989 | <0.009 |
| Aldehídoacético | 75-07-0 | Cancerígeno. | Listed: April 1, 1988 | <0.002 |
| Acrilamida | 79-06-1 | Cancerígeno. | Listed: January 1, 1990 | <0.0009 |
| Cianuro De Vinilo | 107-13-1 | Cancerígeno. | Listed: July 1, 1987 | <0.0003 |

Advertencia: Los siguientes ingredientes presentes en el producto son conocidos para el Estado de California por causar defectos de nacimiento u otros daños reproductivos:

Ninguno

Sección 16 - Otra información

Índices HMIS:

Salud: 1 Inflamabilidad: 1 Reactividad: 0 Protección personal: X

COMPONENTES ORGÁNICOS VOLÁTILES, GR/LTR: 25.1 LB/GAL: 0.2 WT%: 1.044

RAZÓN DE LA REVISIÓN: Periódico Actualiza

Leyenda:

N.E. - No establecido

N.A. - No aplica

NJRTK - Ley del Derecho a saber de New Jersey

N.D. - No determinado

OSHA - Administración de la seguridad y salud ocupacional

LD50 - Dosis letal 50

PEL - Límites permitidos de exposición

C - Grados centígrados

VOC - Componente orgánico volátil

NTP - Programa nacional de toxicología

STEL - Límite de exposición a corto plazo

CEIL - Límite máximo de exposición

MSDS - Hoja de datos de la seguridad de los materiales

LC50 - Concentración letal 50

HMIS - Sistema de identificación de materiales peligrosos

F - Grados Fahrenheit

CASRN - Número de registro de servicios de abstractos químicos

TLV - Valor del límite umbral

ACGIH - Conferencia Americana de Higienistas Industriales gubernamentales

SARA - Ley Ley de enmienda y reautorización de fondos especiales de 1986 (SARA)

DAP cree que los datos y las declaraciones contenidos en el presente son exactos hasta la fecha. Se ofrecen de buena fe como valores típicos y no como las especificaciones del producto. **NO SE OFRECE NINGUNA GARANTÍA DE**

COMERCIABILIDAD, IDONEIDAD PARA UN PROPÓSITO EN PARTICULAR O CUALQUIER OTRA GARANTÍA, EXPRESA O IMPLÍCITA, CON RESPECTO A LA INFORMACIÓN SUMINISTRADA EN EL PRESENTE O DEL PRODUCTO AL CUAL LA INFORMACIÓN SE REFIERE. Dado que este documento tiene la intención de ser una guía únicamente para el uso correcto y el manejo preventivo del producto de la referencia por parte de personas correctamente entrenadas, es responsabilidad del usuario (i) revisar las recomendaciones con especial consideración al contexto específico del uso que se pretende y (ii) determinar si son correctas.

<Final de la hoja de datos de la seguridad de los materiales>

Fiche signalétique

24 heures – Numéros de téléphone en cas d'urgence:

**Urgence médicale: 1-800-327-3874
1-513-558-5111**
**Urgence transport: 1-800-535-5053
1-352-323-3500**

.....
•NOTE: Les numéros de téléphone en cas d'urgence doivent être
•utilisés uniquement lors de déversement, de fuite, d'incendie,
•d'exposition ou d'accident impliquant des produits chimiques.
.....

IMPORTANT: Lire attentivement cette fiche signalétique avant de manipuler ou de disposer de ce produit. Remettre ces informations aux employés, clients et utilisateurs de ce produit. Ce produit est régi sous la gouverne de l'OSHA, Communication de renseignements à l'égard de matières dangereuses, et ce document a été préparé pour répondre aux exigences de ces standards. Les significations pour toutes les abréviations utilisées dans cette fiche signalétique sont décrites à la Section 16.

Section 1 – Identification du produit et de la compagnie

This MSDS is offered in English upon request.
Los Datos de Seguridad del Producto pueden obtenerse en Espanol si lo requiere.

| | | | |
|---------------------------------------|--|---------------------------|-------------|
| Nom du produit: | SellaCil Banheira, box e Azulejos KWIK SEAL - TOUTES COULEU | Date de révision: | 05/09/2005 |
| Numéro UPC: | 18001 18002 18006 18012 18013 18014 18032 18034 35026 35028 71018 71023 71040 71050 | Date d'abrogation: | 08/27/2002 |
| Utilisation du produit/Classe: | Calfeutrante au latex | Numéro de fiche: | 00010009001 |
| Fabricant: | DAP Inc. 2400 Boston Street Suite 200 Baltimore, MD 21224-4723 888-327-8477 (Pour toute information non urgente) | | |

Section 2 - Composition / Ingrédients dangereux

| Nom Chimique | CASRN | Poids% | ACGIH TWA | ACGIH STEL | ACGIH CEIL | OSHA TWA | OSHA STEL | OSHA CEIL | Peau |
|---|--------------------|---------|-----------|------------|------------|------------------------------|-----------|-----------|------|
| Pierre à chaux | 1317-65-3 | 30-60 | 10 MGM3 | N.E. | N.E. | 5 MGM3 | N.E. | N.E. | Non |
| Di(C7, C9) Ester. Britannique & Lin éaire | PHTHALATE ESTER | 1-5 | N.E. | N.E. | N.E. | N.E. | N.E. | N.E. | Non |
| Acétate de butyle normal | 123-86-4 | 0.1-1.0 | 150 PPM | 200 PPM | N.E. | 150 PPM | N.E. | N.E. | Non |
| Éthylène glycol | 107-21-1 | 0.1-1.0 | N.E. | N.E. | 100 MGM3 | N.E. | N.E. | N.E. | Non |
| Silice cristalline | 14808-60-7 | 0.1-1.0 | 0.05 MGM3 | N.E. | N.E. | (10 ÷ % SiO2) / 2 MGM3 | N.E. | N.E. | Non |
| Formaldéhyde | 50-00-0 | <0.03 | N.E. | N.E. | 0.3 PPM | 0.75 PPM | 2 PPM | N.E. | Non |
| Dioxyde de titane | 13463-67-7 | <0.02 | 10 MGM3 | N.E. | N.E. | 15 MGM3 | N.E. | N.E. | Non |
| Acrylate d'éthyle | 140-88-5 | <0.009 | 5 PPM | 15 PPM | N.E. | 25 PPM | N.E. | N.E. | Oui |
| Acétaldéhyde | 75-07-0 | <0.002 | N.E. | N.E. | 25 PPM | 200 PPM | N.E. | N.E. | Non |
| Acrylonitrile | 107-13-1 | <0.0003 | 2 PPM | N.E. | N.E. | 2 PPM | 10 PPM | N.E. | Oui |

Notes concernant l'exposition:

50-00-0 Formaldéhyde est une substance régie spécialement selon les standards d'exposition à des produits chimiques spécifiques établis par l'OSHA. Pour de plus amples informations concernant cette

substance, consulter l'OSHAS 29 CFR 1910.1048. Les informations concernant les problèmes médicaux à surveiller sont à l'Appendice C de l'OSHAS 29 CFR 1910.1048.

107-13-1 Acrylonitrile est une substance régie spécialement selon les standards d'exposition à des produits chimiques spécifiques établis par l'OSHA. Pour de plus amples informations concernant cette substance, consulter l'OSHAS 29 CFR 1910.1045. Les informations concernant les problèmes médicaux à surveiller sont à l'Appendice C de l'OSHAS 29 CFR 1910.1045.

Important: Les limites d'exposition permises (LEP) décrites proviennent du Department of Labor des États-Unis, règlement final concernant les valeurs d'exposition moyennes pondérées de l'OSHA (CFR 29 1910.1000); ces limites peuvent varier selon les états.

Note: Prendre tous les moyens selon les circonstances afin de prévenir ou réduire toute exposition de la peau des employés aux substances portant la mention «OUI» dans la colonne «PEAU» du tableau ci-dessus. Utiliser des gants, une combinaison, des lunettes étanches, tout autre équipement de protection personnel ad équat, les contrôles techniques et les pratiques appropriées au type de travail.

Section 3 – Identification des dangers

Urgences générales: Un Color é la Pâte avec un l'odeur d'Ammoniaque Très Insignifiante. **AVERTISSEMENT !** Nocif si avalé ou absorbé par la peau. Peut causer une irritation des yeux, de la peau, du nez, de la gorge et des voies respiratoires. Ce produit contient du glycol d'éthylène.

Consulter les autres sections de cette fiche signalétique pour des informations plus détaillées.

Effets de surexposition – Contact oculaire: Peut causer une irritation des yeux.

Effets de surexposition – Contact cutané: Nocif en cas d'absorption par la peau. Peut entraîner une sensibilisation par contact avec la peau. Peut causer des irritations de la peau et/ou dermatites.

Effets de surexposition – Inhalation: Nocif en cas d'ingestion L'exposition prolongée, ou répétée, ou à de fortes concentrations peut provoquer un affaiblissement et une dépression du système nerveux central. Peut irriter le système respiratoire. L'inhalation des vapeurs peut causer une irritation du nez, de la gorge, des poumons et des voies respiratoires.

Effets de surexposition – Ingestion: Nocif si ingéré.

Effets de surexposition – Dangers chroniques: Un contact excessif et répété avec la peau peut causer une irritation et possiblement une dermatite. Une exposition excessive et répétée peut causer des lésions au système respiratoire. Une exposition excessive peut causer des lésions aux reins, au système cardiovasculaire, à la peau et au foie.

La vapeur de formaldéhyde est une substance cancérigène animale connue selon OSHA et NTP et est probablement considérée cancérigène aux humains par l'inhalation. L'Agence Internationale pour la Recherche sur le Cancer considère du formaldéhyde pour être une substance cancérigène humaine.

Une exposition excessive et répétée à l'éthylène glycol peut causer des lésions aux reins et au foie. Les études en laboratoire menées sur des animaux ont démontré que l'inhalation répétée d'éthylène glycol cause des changements néfastes du système cardiovasculaire. Lors d'études en laboratoire sur les animaux, il a été démontré que l'éthylène glycol cause des anomalies congénitales.

Voie(s) d'absorption: Peau le Contact, Inhalation, Oeil le Contact

Problèmes médicaux aggravés lors d'exposition au produit : Aucune connue.

Section 4 – Premiers soins

Premiers soins – Contact oculaire: En cas de contact avec les yeux, rincer abondamment avec de l'eau pendant au moins 15 minutes ou jusqu'à ce que l'irritation disparaisse. Obtenir des soins médicaux immédiatement.

Premiers soins – Contact cutané: Laver immédiatement et abondamment avec de l'eau et du savon à l'eau pendant au moins 15 minutes. Si les symptômes persistent, obtenir des soins médicaux. Enlever et laver les vêtements contaminés.

Premiers soins – Inhalation: En cas d'inhalation, transporter la personne exposée à l'air frais. Si elle a de la difficulté à respirer, quitter les lieux afin d'obtenir de l'air frais. Si la difficulté à respirer persiste, obtenir des soins médicaux immédiatement.

Premiers soins – Ingestion: En cas d'ingestion, NE PAS FAIRE VOMIR. Obtenir des soins médicaux immédiatement.

Note au médecin: Pas d'information.

COMMENTAIRES: En cas d'apparition d'une irritation ou de complications suite à une exposition au produit, communiquer immédiatement avec l'urgence médicale au 1-800-327-3874.

Section 5 – Mesures de protection en cas d'incendie

Point d'éclair, ° F (° C): > 200 F
Méthode: (Seta A Fermé la Tasse)

Limite d'explosibilité inférieure, %: Pas Etabli
Limite d'explosibilité supérieure, %: Pas Etabli

Moyens d'extinction: Dioxyde de carbone, Sécher Chimique, Mousse, Arroser le Brouillard

Risques particuliers d'explosions ou d'ignition: Pas de mesures spéciales de protection requises pour la lutte contre le feu.

Procédures spéciales de lutte contre les incendies: Porter un respirateur autonome à pression d'air (approuvé NIOSH ou équivalent) et un équipement de protection personnel complet. Utiliser une lance-brouillard afin de refroidir les contenants exposés.

Section 6 – Mesures en cas de déversement accidentel

Procédures de nettoyage: Porter un équipement de protection personnel approprié tel que spécifié à la Section 8. Utiliser un matériau absorbant ou gratter le matériau sec puis le déposer dans un contenant.

Section 7 – Manutention et entreposage

Manutention: TENIR HORS DE LA PORTÉE DES ENFANTS! NE PAS AVALER. Éviter de respirer les vapeurs. Utiliser seulement si la ventilation est adéquate. Laver vigoureusement après la manipulation. Évitez de respirer les vapeurs et ne laissez pas le produit venir en contact avec les yeux, la peau ou les vêtements. Ouvrir toutes les fenêtres et les portes ou utiliser tout autre moyen afin d'assurer une ventilation en croisé et l'entrée d'air frais durant l'application et le temps de séchage. L'odeur n'est pas un critère valable pour déterminer les conditions de danger.

Entreposage: Refermer les contenants après usage. Entreposer les contenants loin de la chaleur excessive ou du froid excessif. Entreposer loin des produits caustiques et des agents oxydants. Ne pas entreposer à des températures supérieures à 120° F (48,8° C).

Section 8 – Contrôles d'exposition / Protection personnelle

Mesures de précaution: S'il vous plaît se référer aux autres sections et aux autres sous-sections de ce MSDS.

Contrôles d'ingénierie: Une bonne ventilation centrale devrait suffire pour contrôler les niveaux de matières en suspension. Assurer une ventilation adéquate, surtout dans les endroits clos. Une ventilation locale près de la source d'émission peut être nécessaire pour maintenir la concentration ambiante au-dessous des niveaux limites recommandés.

Protection des voies respiratoires: En cas de ventilation insuffisante, porter un appareil respiratoire approprié. Dans certaines circonstances, lorsque le niveau anticipé de concentrations en suspension est supérieur aux limites d'exposition permises, il est nécessaire de porter un respirateur purificateur d'air muni d'une cartouche ou d'un filtre à cartouche anti-vapeurs organiques. Un programme de protection respiratoire défini selon les normes de l'OSHA 1910.134 et de l'ANSI Z88.2 doit être appliqué à chaque fois que les conditions sur les lieux de travail exigent de porter un respirateur.

Protection de la peau: gants en caoutchouc

Protection des yeux: Lunettes étanches ou lunettes de sécurité avec boucliers latéraux.

Équipements de protection additionnels: inutile dans les conditions normales d'utilisation.

Pratiques hygiéniques: Se laver les mains avant les pauses et à la fin de la journée. Enlever et laver les vêtements contaminés avant réutilisation.

Section 9 – Propriétés physiques et chimiques

| | | | |
|--|---------------------------------|---------------------------------------|----------------------------------|
| Point d'ébullition: | 210 - 220 F | Densité de vapeur: | Plus lourd Qu'Aérer |
| Odeur: | L'Ammoniaque très Insignifiante | Limite de détection olfactive: | Pas Etabli |
| Apparence: | Coloré | Taux d'évaporation: | Plus lent Que Acétate de n-Butyl |
| Solubilité dans l'eau (H₂O): | Pas Etabli | Poids spécifique: | 1.579 |
| Point de congélation: | Pas Etabli | Taux de pH: | Entre 7,0 et 12,0 |
| Pression de vapeur: | Pas Etabli | Viscosité: | Pas Etabli |
| État physique: | Pâte | | |

(Consulter la Section 16 pour connaître la signification des abréviations))

Section 10 – Stabilité et réactivité

Conditions à éviter: Chaleur excessive ou froid excessif.

Incompatibilité: Incompatible avec les bases fortes et les oxydants.

Produits de décomposition dangereux: Produits de décomposition habituels : oxydes de carbone (COx) et oxydes d'azote (NOx).

Risque de polymérisation: Aucune polymérisation dangereuse ne surviendra dans des conditions normales d'utilisation.

Stabilité: Stable dans les conditions recommandées de stockage.

Section 11 – Propriétés toxicologiques

Produit DL50: Pas Etabli

Produit CL50: Pas Etabli

| CASRN | Nom Chimique | LD50 | LC50 | Poids% |
|-----------------|---|--------------------|------------------|---------|
| PHTHALATE ESTER | Di(C7, C9) Ester. Britannique & Lin éaire | Oral Rat: 10 mg/kg | ----- | 1-5 |
| 123-86-4 | Acétate de butyle normal | Rat:10768 MG/KG | Rat:2000 P | 0.1-1.0 |
| 107-21-1 | Éthylène glycol | Rat:4700 mg/kg | Rat:10876 mg/kg | 0.1-1.0 |
| 7664-41-7 | Ammoniac | ----- | Rat:2000 ppm/4H | <0.05 |
| 50-00-0 | Formald éhyde | ----- | Rat:203 mg/m3 | <0.03 |
| 140-88-5 | Acrylate d'éthyle | ----- | Rat:1414 ppm/4H | <0.009 |
| 75-07-0 | Acétald éhyde | ----- | Rat:13300 ppm/4H | <0.002 |
| 107-13-1 | Acrylonitrile | Oral Rat:78 mg/kg | Rat:425 ppm/4H | <0.0003 |

Effets cancérogènes:

| Numéro CAS | Nom Chimique | ACGIH | OSHA | IARC | NTP | Poids% |
|------------|--------------------|---|--------------------------------|-----------------------|---------------------|---------|
| 14808-60-7 | Silice cristalline | Présumée cancérogène humaine. | ----- | Cancérogène humaine. | Cancérogène connue. | 0.1-1.0 |
| 50-00-0 | Formald éhyde | Présumée cancérogène humaine. | Le danger potentiel de cancer. | Cancérogène humaine. | Cancérogène prévue. | <0.03 |
| 140-88-5 | Acrylate d'éthyle | ----- | ----- | Cancérogène possible. | ----- | <0.009 |
| 75-07-0 | Acétald éhyde | Confirmée cancérogène animale avec le pertinence inconnu aux humains. | ----- | Cancérogène possible. | Cancérogène prévue. | <0.002 |
| 79-06-1 | Acrylamide | Confirmée cancérogène animale avec le pertinence inconnu aux humains. | ----- | Cancérogène probable. | Cancérogène prévue. | <0.0009 |
| 107-13-1 | Acrylonitrile | Confirmée cancérogène animale avec le pertinence inconnu aux humains. | Danger de cancer. | Cancérogène possible. | Cancérogène prévue. | <0.0003 |

Données significatives possiblement pertinentes à l'humain: Ce produit contient les quantités de trace de formaldéhyde libre. OSHA et NTP identifient du formaldéhyde comme une substance cancérogène potentielle. IARC identifie du formaldéhyde comme une substance cancérogène humaine. Le formaldéhyde a été montré pour causer des mutations dans une assortment de systèmes de test in vitro, la signification dont à l'être humain inconnu. Des études d'inhalation d'une durée de deux ans effectuées sur le rat ont mis en évidence des effets cancérogènes sur le système respiratoire pour des concentrations de 15 ppm de formaldéhyde. Le risque devrait être minime si la ventilation est adéquate et maintient le niveau de concentrations de formaldéhyde en suspension sous les limites d'exposition permises.

Maintenir une ventilation adéquate afin d'abaisser les niveaux d'exposition sous les limites établies par l'OSHA / ACGIH. L'analyse de l'air ambiant sur les lieux de travail peut s'avérer nécessaire afin de déterminer les niveaux d'exposition au formaldéhyde. Ce produit contient des traces d'acrylonitrile. Il ne rencontre pas les standards de l'OSHA 29 CFR 1910.1045, paragraphe (a) (2) (ii) concernant l'acrylonitrile. L'acrylonitrile a été classifiée potentiellement cancérogène pour l'humain par l'AIRC, cancérogène par l'OSHA et cancérogène raisonnablement anticipé pour l'humain par la NTP.

Section 12 – Information écologique

Information écologique: Aucune dégradation de l'environnement n'est connue ou prévisible dans les conditions normales d'utilisation.

Section 13 – Information sur la mise au rebut

Information concernant la mise au rebut: Disposer de ce matériau en respectant les lois fédérales, provinciales et municipales. Les lois et restrictions provinciales et municipales sont complexes et peuvent différer des lois fédérales. La responsabilité de la disposition appropriée des déchets appartient au propriétaire des déchets.

Code de mise au rebut de l'Agence de protection de l'environnement (40 CFR Section 261): Ce produit ne

rencontre pas la définition d'un déchets dangereux selon le Règlement de Direction de Déchets dangereux de EPA américain, 40 CFR Section 261.

Section 14 – Étiquetage selon le Ministère des Transports

Nom du produit expédié: Pas Régulé
Nom technique: Pas Applicable
Classe de danger: Pas Applicable
Groupe d'emballage: Pas Applicable
Classe de transport: Pas Applicable
Numéro UN/NA: Aucun

Note : L'information d'expédition fournie est applicable pour le transport de sol domestique seulement. La catégorisation différente peut s'appliquer si expédié via les autres modes de et/ou de transport aux destinations non résidentielles.

Section 15 – Information sur les règlements

CERCLA - Catégories de dangers selon le SARA:

Ce produit a été revu en conformité avec les «Catégories de dangers» établies par l'Agence de protection de l'environnement et promulguées aux Sections 311 et 312 du Superfund Amendment and Reauthorization Act de 1986 (SARA Titre III). Selon les définitions applicables, il est considéré répondre aux catégories suivantes :

RISQUE DE SANTE IMMEDIAT, RISQUE DE SANTE CHRONIQUE

SARA SECTION 313 :

Ce produit contient les substances suivantes assujetties aux normes de déclaration de la Section 313, du Titre III de la Superfund Amendments and Reauthorization Act de 1986 et du 40 CFR partie 372 :

| Nom Chimique | Numéro CAS | Poids% |
|-----------------|------------|---------|
| Éthylène glycol | 107-21-1 | 0.1-1.0 |

LOI SUR LE CONTRÔLE DES SUBSTANCES TOXIQUES:

Tous ingrédients dans ce produit sont ou sur la liste d'inventaire de TSCA, ou autrement exempter.

Ce produit contient les substances chimiques suivantes à déclarer selon les normes TSCA 12(B) si exporté à l'extérieur des États-Unis:

| Nom Chimique | Numéro CAS | Poids% |
|---------------------------------|------------|--------|
| 2-Methyl-4-Isothiazolin-3-One | 2682-20-4 | Trace |
| 5-Chloro-2-Methyl-4-Isothiazoli | 26172-55-4 | Trace |

Lois particulières selon les états aux États-Unis:

NEW JERSEY RIGHT-TO-KNOW :

Les substances suivantes sont non-dangereuses mais sont comptées parmi les 5 principaux ingrédients composant ce produit:

| Nom Chimique | Numéro CAS | Poids% |
|--|---------------|--------|
| Eau | 7732-18-5 | 10-30 |
| Eth Acr,2Ethhex,Acr courant alternatif, N-Meth | De propri été | 10-30 |

PENNSYLVANIA RIGHT-TO-KNOW:

Les substances suivantes sont non-dangereuses mais sont présentes à plus de 3% dans ce produit:

| Nom Chimique | Numéro CAS | Poids% |
|--|---------------|--------|
| Eau | 7732-18-5 | 10-30 |
| Eth Acr,2Ethhex,Acr courant alternatif, N-Meth | De propri été | 10-30 |

PROPOSITION 65 DE CALIFORNIE:

AVERTISSEMENT ! Les produits chimiques list és ci-dessous et contenus dans ce produit sont reconnus par l'État de la Californie pour causer le cancer:

| Nom Chimique | Numéro CAS | Définition | Dater Enuméré | Poids% |
|--------------------|------------|--------------|-------------------------|---------|
| Silice cristalline | 14808-60-7 | Cancérogène. | Listed: October 1, 1988 | 0.1-1.0 |
| Formald éhyde | 50-00-0 | Cancérogène. | Listed: January 1, 1988 | <0.03 |
| Acrylate d'éthyle | 140-88-5 | Cancérogène. | Listed: July 1, 1989 | <0.009 |
| Acétald éhyde | 75-07-0 | Cancérogène. | Listed: April 1, 1988 | <0.002 |
| Acrylamide | 79-06-1 | Cancérogène. | Listed: January 1, 1990 | <0.0009 |
| Acrylonitrile | 107-13-1 | Cancérogène. | Listed: July 1, 1987 | <0.0003 |

AVERTISSEMENT ! Les produits chimiques list és ci-dessous et contenus dans ce produit sont reconnus par l'État de la Californie pour causer le cancer, des anomalies congénitales ou d'autres problèmes reliés à la reproduction:

Aucun

Section 16 – Autres informations

Classification des dangers:

Santé: 1 Inflammabilité: 1 Réactivité: 0 Protection personnelle: X

COMPOSÉ ORGANIQUE VOLATIL, G/LITRE: 25.1 LB/GALLON: 0.2 POIDS %: 1.044

RAISONS DE RÉVISION: Mise à jour p ériodique

Légende:

N.A. – Non applicable

LD50 – Dose létale 50

N.É. – Non établi

LC50 – Concentration létale 50

N.D. – Non déterminé

NJRTK – New Jersey Right-to-Know Law

OSHA – Occupational Safety and Health Administration

VOC – Composé organique volatil

HMIS – Hazardous Materials Identification System

PEL – Limite d'exposition permise

TWA – Valeur d'exposition moyenne pondérée

TLV – Limite tolérable d'exposition

NTP – National Toxicology Program

F – Degré Fahrenheit

STEL – Limite d'exposition à court terme

C – Degré Celcius

CASRN – Numéro enregistré selon le Chemical Abstracts Service

ACGIH – American Conference of Governmental Industrial Hygienists

SARA – Superfund Amendments and Reauthorization Act de 1986

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act

DAP croit que les données et renseignements stipulés dans cette fiche signalétique sont précis à la date de rédaction de cette fiche. Ces données sont offertes en toute bonne foi et représente des valeurs standard sans toutefois être des spécifications du produit. **AUCUNE GARANTIE SUR LA QUALITÉ MARCHANDE, GARANTIE D'APTITUDE POUR AUCUN TYPE D'EMPLOI PARTICULIER OU TOUTE AUTRE FORME DE GARANTIE N'EST EXPRESSÉMENT OU IMPLICITEMENT OFFERTE EN REGARD DES INFORMATIONS FOURNIES DANS CETTE FICHE OU DES INFORMATIONS RELATIVES AU PRODUIT.** Cette fiche est produite uniquement à titre de guide pour les personnes formées à cet effet afin qu'elles puissent appliquer les procédures appropriées de manutention auxquelles le produit réfère. Toutefois, c'est la responsabilité chaque utilisateur de revoir les recommandations selon le contexte spécifique de l'utilisation prévue et de déterminer si ces procédures sont appropriées.

<Fin de la fiche signalétique>

Section A

#6



MATERIAL SAFETY DATA SHEET**VULKEM 116**Issue Date: 19th November 1999Re-issue date: 1st July, 2000Re-issue date: 1st July, 2005

Page 1 of Total 4

STATEMENT OF HAZARDOUS NATURE

Not classified as hazardous according to criteria of Worksafe Australia.

COMPANY DETAILS

Company: Tremco Pty Limited
Address: Unit 1, 2 Park Rd, RYDALMERE NSW 2116
Telephone no: 02 96382755
Facsimile no: 02 96382955
Emergency Telephone no: 1800224512 (business hours only)

IDENTIFICATION

Product Name: VULKEM 116

UN Number: None allocated
Dangerous Goods Class/Subsidiary Risk: None allocated
Hazchem Code: None allocated
Packaging Group: None allocated
Correct Shipping Name: None allocated.
Poisons Schedule: None allocated

Use: For use as general purpose sealant. Applied using a gun. Do not apply over damp or contaminated surfaces and use with adequate ventilation.

Physical Description/Properties

Appearance: various coloured paste
Flash point (°C): 65° C
Vapour Pressure: Not available
Specific Gravity: 1.3
Explosion limits: Not established
Solubility in Water: Negligible
Other Properties:
% volatile weight 10.0
Vapour Density: >1

Material Safety Data Sheet

VULKEM 116

Page 2 of Total 4

Ingredients

| Chemical Name: | CAS Number: | Proportion: |
|---------------------------------------|-------------|-------------|
| Aromatic polyisocyanate resin | TS | 30-60% |
| Calcium carbonate | 1317-65-3 | 10-20% |
| Plasticizer | TS | 5-10% |
| Tackifier | TS | 5-10% |
| Butyl Benzyl Phthalate | 85-68-7 | 5-10% |
| Thickener | TS | 300-7.0% |
| Inert Filler | TS | 1-5% |
| Aromatic Petroleum Distillates | 64742-95-6 | 1.0-10% |
| Trimethyl Benzene | 2551-13-7 | 1.0-5.0% |
| 4,4-methylene Bis (phenyl isocyanate) | 101-68-8 | 0.1-0.5% |
| Toluene diisocyanate | 2671-62-5 | 0.1-0.53% |
| Ethyl benzene | 100-41-4 | <1% |
| Xylene | 1330-20-7 | 0.1-0.5% |
| Polymethylene polyphenyl isocyanate | 9016-87-9 | 0.1-0.5% |
| Crystalline silica | 14808-60-7 | 0.01-0.4% |
| Carbon black | 1333-86-4 | 0.0-2.0% |
| Titanium dioxide | 13463-67-7 | 0.0-10.0% |
| Iron oxide | 1309-37-1 | 0.0-7% |

HEALTH HAZARD INFORMATION

Health Effects:

This product contains isocyanates which may result in asthma-like symptoms following inhalation for person who are sensitised to isocyanates.

Acute:

Swallowed: Ingestion may result in nausea. Other effects may be described for exposure to vapours.

Eye: Splashes in the eye are unlikely due to the nature of the product however, the product may cause irritation and reversible local damage.

Skin: Repeated or prolonged contact with the product may lead to the removal of natural fats from the skin resulting in non-allergic contact dermatitis and absorption through the skin.

Inhaled: Sensitiser. Based on the properties of the isocyanate content, respiratory exposure may cause acute irritation and/or sensitisation of respiratory system resulting in asthmatic symptoms, wheezing and tightness of the chest.

Exposure to organic solvent vapours may result in adverse health effects such as irritation of the mucous membranes and the respiratory system. Symptoms include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases loss of consciousness.

Chronic:

Effects of long term exposure not known, short- term exposure is not expected to cause major problems if removed promptly. Repeated or prolonged contact with skin, eyes or respiratory system may cause skin and respiratory sensitisation.

Sensitized persons may show asthma like symptoms when exposed to airborne contaminants well below the exposure limits. As a result, individuals who have a history of asthma or respiratory disorders are advised not to work with isocyanates.

Carbon Black is an IARC listed animal carcinogen and possible human carcinogen. Fillers are encapsulated and are not expected to be released from the product under normal conditions of use.

Material Safety Data Sheet
VULKEM 116
Page 3 of Total 4

HEALTH HAZARD INFORMATION

First Aid:

- Swallowed: Do **NOT** induce vomiting without medical advice. Contact the Poisons Information Centre (Phone 13 1126). If any adverse reaction transport to the nearest hospital or doctor. Take a copy of this MSDS.
- Eye: Flush immediately with copious amounts of running water, while holding the eyelids open from time to time, for 15 minutes or until irritation subsides. Obtain medical attention immediately.
- Skin: Remove any contaminated clothing and flush area with water. Use soap and water or proprietary handcleaner if available. If irritation, rash or other disorders develop seek medical attention.
- Inhaled: Remove person to fresh air. Avoid further overexposure. If symptoms persist seek medical attention. If breathing stopped, give artificial respiration. Give nothing by mouth. Keep the person calm and obtain medical attention immediately.
- First Aid Facilities: Eye wash and shower.

Note: If ANY signs of distress or adverse reaction to contact with ANY chemical product immediately transport to the nearest hospital or doctor.

PRECAUTIONS FOR USE

- Exposure Standards: Exposure limits not determined for the compound.
- | Limits of hazardous component/s | | |
|---------------------------------|-----------------------------|------|
| Xylene | 80ppm/350mg/m ³ | TWA |
| | 150ppm/655mg/m ³ | STEL |
| Isocyanates | 0.02mg/m ³ | TWA |
| | 0.07mg/m ³ | STEL |
| Titanium dioxide | 10mg/m ³ | TWA |
| Ethyl benzene | 100ppm/434mg/m ³ | TWA |
| | 125ppm/543mg/m ³ | STEL |
| Calcium oxide | 2mg/m ³ | TWA |
| Carbon Black | 3mg/m ³ | TWA |
- Engineering Controls: Local ventilation not normally necessary but should be considered if the product is used in poorly ventilated or confined spaces alternatively use a respiratory mask fitted with a type A1 filter and complying with AS 1716 and used in accordance with AS1715 which describes use and maintenance.

Material Safety Data Sheet

VULKEM 116

Page 4 of Total 4

PRECAUTIONS FOR USE

- Personal Protection:** Chemically resistant gloves are recommended if prolonged skin contact likely. Wear chemical splash goggles to avoid eye contact. If used in confined spaces use self-contained breathing apparatus. Smoking, eating and drinking should be prohibited in areas of storage and use. In non-emergency situations where inhalation risk of overexposure exists, wear Standards Association of Australia (SM) approved respirator (suitable for hydrocarbon vapours). Correct fit is essential to obtain adequate protection. For confined spaces or emergencies involving very high concentrations use SM approved self contained breathing apparatus (SCBA).
- Flammability:** Non-flammable under conditions of use in a well-ventilated area.

SAFE HANDLING INFORMATION

- Transport** This product is not classified as a dangerous good under the provisions of the "Australian Code for the Transport of Dangerous Goods by Road and Rail".
- Storage** Store under normal warehouse conditions. Keep closed when not in use. Prevent inhalation of vapour, ingestion and contact with the skin. Precautions also apply to empty containers.
- Reactivity Data**
- Stability:** Stable
- Materials to Avoid:** Keep away from oxidising agents and strongly alkaline and strongly acidic materials to prevent the possibility of exothermic reaction.
- Spills & Disposal:** Remove all ignition sources. Keep people away. Recover free material. Add absorbent (sand, earth, sawdust etc.) to spill area. Avoid breathing vapours. Ventilate enclosed spaces. Provide barriers to prevent liquid from entering streets, sewers or waterways. Assure conformity with applicable disposal regulations. Dispose of cured material at an approved disposal site or facility. Vapours are heavier than air and spread along the floor. Residues in empty containers should be decontaminated prior to disposal according to local regulations.
- Fire/Explosion Hazard:**
- Extinguishing Media:** Use water fog. Use water spray to cool fire exposed personnel and to protect personnel. Product produces oxides of nitrogen, carbon dioxide and carbon monoxide. Hydrogen cyanide gas may be produced under certain conditions. Use self contained air breathing equipment.
- Hazardous**
- Decomposition:** In a fire hazardous products such as smoke, carbon monoxide, carbon dioxide and oxides of nitrogen may be produced. Hydrogen cyanide may be produced.

OTHER INFORMATION

If used according to manufacturer's conditions this product is safe to use, however, persons known to be hypersensitive (asthma, chronic bronchitis) should not use this product.

Contact Point: OHS&E Officer

Telephone no: 1800224512

The information provided by TREMCO in relation to TREMCO's goods or their use is given in good faith, which has been compiled from various sources and is believed by TREMCO to be appropriate and reliable. The actual use and application of the goods will vary with application conditions which are beyond our control. TREMCO makes no representation, guarantee or warranty relating to the accuracy or reliability of the information and assumes no obligation or liability in connection with the information.

IPS, WELD-ON, Solvents & Cements

Contents:

- 1. Glue, 717**
- 2. Primer, p-68**
- 3. Cpvc glue, Gold**
- 4. Cpvc glue, Orange**
- 5. Cpvc glue, Orange**
- 6. Clear primer, p-70**

Section B



Section B



GHS SAFETY DATA SHEET

WELD-ON® 717™ Low VOC Cements for PVC Plastic Pipe

Date Revised: DEC 2011

Supersedes: FEB 2010

Section B

#1

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WELD-ON® 717™ Low VOC Cements for PVC Plastic Pipe

PRODUCT USE: Low VOC Solvent Cement for PVC Plastic Pipe

SUPPLIER:

MANUFACTURER: IPS Corporation
17109 South Main Street, Carson, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, 813-248-0585 (International)

Medical: Tel. 800.451.8346, 760.602.8703 3E Company (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

| Health | Environmental | Physical |
|---|--|-----------------------------|
| Acute Toxicity: Category 4 Skin Irritation: Category 3 Skin Sensitization: NO Eye: Category 2B | Acute Toxicity: None Known Chronic Toxicity: None Known | Flammable Liquid Category 2 |

GHS LABEL:



OR



Signal Word:
Danger

WHMIS CLASSIFICATION: CLASS B, DIVISION 2

Hazard Statements

H225: Highly flammable liquid and vapor
H319: Causes serious eye irritation
H332: Harmful if inhaled
H335: May cause respiratory irritation
H336: May cause drowsiness or dizziness
EUH019: May form explosive peroxides

Precautionary Statements

P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
P261: Avoid breathing dust/fume/gas/mist/vapors/spray
P280: Wear protective gloves/protective clothing/eye protection/face protection
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P403+P233: Store in a well ventilated place. Keep container tightly closed
P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

| | CAS# | EINECS # | REACH Pre-registration Number | CONCENTRATION % by Weight |
|---------------------------|----------|-----------|----------------------------------|------------------------------|
| Tetrahydrofuran (THF) | 109-99-9 | 203-726-8 | 05-2116297729-22-0000 | 25 - 70 |
| Methyl Ethyl Ketone (MEK) | 78-93-3 | 201-159-0 | 05-2116297728-24-0000 | 5 - 36 |
| Cyclohexanone | 108-94-1 | 203-631-1 | 05-2116297718-25-0000 | 10 - 25 |

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.
Unsuitable Extinguishing Media: Water spray or stream.
Exposure Hazards: Inhalation and dermal contact
Combustion Products: Oxides of carbon, hydrogen chloride and smoke

| | | | |
|--------------|---|---|------------|
| Health | 2 | 2 | 0-Minimal |
| Flammability | 3 | 3 | 1-Slight |
| Reactivity | 0 | 0 | 2-Moderate |
| PPE | B | | 3-Serious |
| | | | 4-Severe |

Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
Prevent contact with skin or eyes (see section 8).
Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up: Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat, drink or smoke while handling.
Storage: Store in ventilated room or shade below 44 °C (110 °F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

| EXPOSURE LIMITS: | Component | ACGIH TLV | ACGIH STEL | OSHA PEL | OSHA STEL: |
|------------------|---------------------------|-----------|------------|----------|------------|
| | Tetrahydrofuran (THF) | 50 ppm | 100 ppm | 200 ppm | |
| | Methyl Ethyl Ketone (MEK) | 200 ppm | 300 ppm | 200 ppm | |
| | Cyclohexanone | 20 ppm | 50 ppm | 50 ppm | |

Engineering Controls: Use local exhaust as needed.
Monitoring: Maintain breathing zone airborne concentrations below exposure limits.
Personal Protective Equipment (PPE):
Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.
Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.
Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above. With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.



GHS SAFETY DATA SHEET

WELD-ON® 717™ Low VOC Cements for PVC Plastic Pipe

Date Revised: DEC 2011

Supersedes: FEB 2010

Section B

#1

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|--|-------------------------------|---|
| Appearance: | Gray or clear, heavy syrupy liquid | Odor Threshold: | 0.88 ppm (Cyclohexanone) |
| Odor: | Ketone | Boiling Range: | 66 °C (151 °F) to 156 °C (313 °F) |
| pH: | Not Applicable | Evaporation Rate: | > 1.0 (BUAC = 1) |
| Melting/Freezing Point: | -108.5 °C (-163.3 °F) Based on first melting component: THF | Flammability: | Category 2 |
| Boiling Point: | 66 °C (151 °F) Based on first boiling component: THF | Flammability Limits: | LEL: 1.1% based on Cyclohexanone |
| Flash Point: | -20 °C (-4 °F) TCC based on THF | | UEL: 11.8% based on THF |
| Specific Gravity: | 0.963 @23 °C (73 °F) | Vapor Pressure: | 129 mm Hg @ 20 °C (68 °F) based on THF |
| Solubility: | Solvent portion soluble in water. Resin portion separates out. | Vapor Density: | >2 (Air = 1) |
| Partition Coefficient n-octanol/water: | Not Available | Other Data: Viscosity: | Heavy bodied |
| Auto-ignition Temperature: | 321 °C (610 °F) based on THF | | |
| Decomposition Temperature: | Not Applicable | | |
| VOC Content: | When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 510 g/l. | | |

SECTION 10 - STABILITY AND REACTIVITY

| | |
|--|--|
| Stability: | Stable |
| Hazardous decomposition products: | None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke. |
| Conditions to avoid: | Keep away from heat, sparks, open flame and other ignition sources. |
| Incompatible Materials: | Oxidizers, strong acids and bases, amines, ammonia |

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, Eye and Skin Contact

Acute symptoms and effects:

| | |
|----------------------|---|
| Inhalation: | Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages. |
| Eye Contact: | Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid. |
| Skin Contact: | Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact. |
| Ingestion: | May cause nausea, vomiting, diarrhea and mental sluggishness. |

Chronic (long-term) effects: None known to humans

Toxicity:

LD₅₀

LC₅₀

| | | |
|---------------------------|---|--|
| Tetrahydrofuran (THF) | Oral: 2842 mg/kg (rat) | Inhalation 3 hrs. 21,000 mg/m ³ (rat) |
| Methyl Ethyl Ketone (MEK) | Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit) | Inhalation 8 hrs. 23,500 mg/m ³ (rat) |
| Cyclohexanone | Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit) | Inhalation 4 hrs. 8,000 PPM (rat) |

| Reproductive Effects | Teratogenicity | Mutagenicity | Embryotoxicity | Sensitization to Product | Synergistic Products |
|-----------------------------|-----------------------|---------------------|-----------------------|---------------------------------|-----------------------------|
| Not Established | Not Established | Not Established | Not Established | Not Established | Not Established |

SECTION 12 - ECOLOGICAL INFORMATION

| | |
|-------------------------|---|
| Ecotoxicity: | None Known |
| Mobility: | In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 510 g/l. |
| Degradability: | Biodegradable |
| Bioaccumulation: | Minimal to none. |

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

| | |
|-------------------------------|--------------------------|
| Proper Shipping Name: | Adhesives |
| Hazard Class: | 3 |
| Secondary Risk: | None |
| Identification Number: | UN 1133 |
| Packing Group: | PG II |
| Label Required: | Class 3 Flammable Liquid |
| Marine Pollutant: | NO |

EXCEPTION for Ground Shipping

DOT Limited Quantity: Up to 5L per inner packaging, 30 kg gross weight per package.
Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D".

TDG INFORMATION

| | |
|---------------------------------|--------------------|
| TDG CLASS: | FLAMMABLE LIQUID 3 |
| SHIPPING NAME: | ADHESIVES |
| UN NUMBER/PACKING GROUP: | UN 1133, PG II |

SECTION 15 - REGULATORY INFORMATION

| | | | |
|---|--|-----------------------------|---|
| Precautionary Label Information: | Highly Flammable, Irritant | Ingredient Listings: | USA TSCA, Europe EINECS, Canada DSL, Australia |
| Symbols: | F, Xi | | AICS, Korea ECL/TCCL, Japan MITI (ENCS) |
| Risk Phrases: | R11: Highly flammable. R20: Harmful by inhalation. R36/37: Irritating to eyes and respiratory system. | | R66: Repeated exposure may cause skin dryness or cracking R67: Vapors may cause drowsiness and dizziness |
| Safety Phrases: | S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking. S25: Avoid contact with eyes. | | S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S33: Take precautionary measures against static discharges. S46: If swallowed, seek medical advice immediately and show this container or label. |

SECTION 16 - OTHER INFORMATION

| | | |
|---|--|---|
| Specification Information: | | |
| Department issuing data sheet: | IPS, Safety Health & Environmental Affairs | All ingredients are compliant with the requirements of the European |
| E-mail address: | <EHSinfo@ipscorp.com> | Directive on RoHS (Restriction of Hazardous Substances). |
| Training necessary: | Yes, training in practices and procedures contained in product literature. | |
| Reissue date / reason for reissue: | 12/14/2011 / Updated GHS Standard Format | |
| Intended Use of Product: | Solvent Cement for PVC Plastic Pipe | |

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.



Section B



GHS SAFETY DATA SHEET

WELD-ON® P-68™ Low VOC Primer for PVC and CPVC Plastic Pipe

Date Revised: DEC 2011
Supersedes: OCT 2010

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WELD-ON® P-68™ Low VOC Primer for PVC and CPVC Plastic Pipe

PRODUCT USE: Low VOC Primer for PVC and CPVC Plastic Pipe

SUPPLIER:

MANUFACTURER: IPS Corporation
17109 South Main Street, Carson, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, 813-248-0585 (International)

Medical: Tel. 800.451.8346, 760.602.8703 3E Company (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

| Health | Environmental | Physical |
|---|--|-----------------------------|
| Acute Toxicity: Category 4 Skin Irritation: Category 3 Skin Sensitization: NO Eye: Category 2B | Acute Toxicity: None Known Chronic Toxicity: None Known | Flammable Liquid Category 2 |

GHS LABEL:



OR



Signal Word:
Danger

WHMIS CLASSIFICATION: CLASS B, DIVISION 2

Hazard Statements

H225: Highly flammable liquid and vapor
H319: Causes serious eye irritation
H332: Harmful if inhaled
H335: May cause respiratory irritation
H336: May cause drowsiness or dizziness
EUH019: May form explosive peroxides

Precautionary Statements

P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
P261: Avoid breathing dust/fume/gas/mist/vapors/spray
P280: Wear protective gloves/protective clothing/eye protection/face protection
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P403+P233: Store in a well ventilated place. Keep container tightly closed
P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

| | CAS# | EINECS # | REACH Pre-registration Number | CONCENTRATION % by Weight |
|---------------------------|----------|-----------|----------------------------------|------------------------------|
| Tetrahydrofuran (THF) | 109-99-9 | 203-726-8 | 05-2116297729-22-0000 | 20 - 35 |
| Methyl Ethyl Ketone (MEK) | 78-93-3 | 201-159-0 | 05-2116297728-24-0000 | 15 - 25 |
| Cyclohexanone | 108-94-1 | 203-631-1 | 05-2116297718-25-0000 | 10 - 30 |
| Acetone | 67-64-1 | 200-662-2 | 05-2116297713-35-0000 | 25 - 40 |

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

Indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.
Unsuitable Extinguishing Media: Water spray or stream.
Exposure Hazards: Inhalation and dermal contact
Combustion Products: Oxides of carbon and smoke

| | | |
|----------------|------|------------|
| HMIS | NFPA | |
| Health 2 | 2 | 0-Minimal |
| Flammability 3 | 3 | 1-Slight |
| Reactivity 0 | 0 | 2-Moderate |
| PPE B | | 3-Serious |
| | | 4-Severe |

Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
Prevent contact with skin or eyes (see section 8).
Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up: Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat, drink or smoke while handling.
Storage: Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

| EXPOSURE LIMITS: | Component | ACGIH TLV | ACGIH STEL | OSHA PEL | OSHA STEL: |
|------------------|---------------------------|-----------|------------|----------|------------|
| | Tetrahydrofuran (THF) | 50 ppm | 100 ppm | 200 ppm | |
| | Methyl Ethyl Ketone (MEK) | 200 ppm | 300 ppm | 200 ppm | |
| | Cyclohexanone | 20 ppm | 50 ppm | 50 ppm | |
| | Acetone | 500 ppm | 750 ppm | 1000 ppm | |

Engineering Controls: Use local exhaust as needed.

Monitoring: Maintain breathing zone airborne concentrations below exposure limits.

Personal Protective Equipment (PPE):

Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.

Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.

Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above.
With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.



GHS SAFETY DATA SHEET

WELD-ON® P-68™ Low VOC Primer for PVC and CPVC Plastic Pipe

Date Revised: DEC 2011

Supersedes: OCT 2010

Section B

#2

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|--|-------------------------------|---|
| Appearance: | Clear or purple, thin liquid | Odor Threshold: | 0.88 ppm (Cyclohexanone) |
| Odor: | Ethereal | Boiling Range: | 56 °C (133 °F) to 156 °C (313 °F) |
| pH: | Not Applicable | Evaporation Rate: | > 1.0 (BUAC = 1) |
| Melting/Freezing Point: | -108.5 °C (-163.3 °F) Based on first melting component: THF | Flammability: | Category 2 |
| Boiling Point: | 56 °C (133 °F) Based on first boiling component: Acetone | Flammability Limits: | LEL: 1.1% based on Cyclohexanone UEL: 12.8% based on Acetone |
| Flash Point: | -20 °C (-4 °F) TCC based on Acetone | Vapor Pressure: | 190 mm Hg @ 20 °C (68 °F) Acetone |
| Specific Gravity: | 0.842 @23 °C (73 °F) | Vapor Density: | >2.0 (Air = 1) |
| Solubility: | Solvent portion soluble in water. Resin portion separates out. | Other Data: Viscosity: | Water-thin |
| Partition Coefficient n-octanol/water: | Not Available | | |
| Auto-ignition Temperature: | 321 °C (610 °F) based on THF | | |
| Decomposition Temperature: | Not Applicable | | |
| VOC Content: | When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 550 g/l. | | |

SECTION 10 - STABILITY AND REACTIVITY

| | |
|--|---|
| Stability: | Stable |
| Hazardous decomposition products: | None in normal use. When forced to burn, this product gives off oxides of carbon and smoke. |
| Conditions to avoid: | Keep away from heat, sparks, open flame and other ignition sources. |
| Incompatible Materials: | Oxidizers, strong acids and bases, amines, ammonia |

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, Eye and Skin Contact

Acute symptoms and effects:

| | |
|----------------------|---|
| Inhalation: | Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages. |
| Eye Contact: | Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid. |
| Skin Contact: | Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact. |
| Ingestion: | May cause nausea, vomiting, diarrhea and mental sluggishness. |

Chronic (long-term) effects:

None known to humans

Toxicity:

| | | |
|---------------------------|---|--|
| | LD ₅₀ | LC ₅₀ |
| Tetrahydrofuran (THF) | Oral: 2842 mg/kg (rat) | Inhalation 3 hrs. 21,000 mg/m ³ (rat) |
| Methyl Ethyl Ketone (MEK) | Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit) | Inhalation 8 hrs. 23,500 mg/m ³ (rat) |
| Cyclohexanone | Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit) | Inhalation 4 hrs. 8,000 PPM (rat) |
| Acetone | Oral: 5800 mg/kg (rat) | Inhalation 50,100 mg/m ³ (rat) |

| <u>Reproductive Effects</u> | <u>Teratogenicity</u> | <u>Mutagenicity</u> | <u>Embryotoxicity</u> | <u>Sensitization to Product</u> | <u>Synergistic Products</u> |
|-----------------------------|-----------------------|---------------------|-----------------------|---------------------------------|-----------------------------|
| Not Established | Not Established | Not Established | Not Established | Not Established | Not Established |

SECTION 12 - ECOLOGICAL INFORMATION

| | |
|-------------------------|---|
| Ecotoxicity: | None Known |
| Mobility: | In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 550 g/l. |
| Degradability: | Biodegradable |
| Bioaccumulation: | Minimal to none. |

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

| | |
|-------------------------------|---|
| Proper Shipping Name: | Flammable Liquid, n.o.s. (Acetone, Tetrahydrofuran) |
| Hazard Class: | 3 |
| Secondary Risk: | None |
| Identification Number: | UN 1993 |
| Packing Group: | PG II |
| Label Required: | Class 3 Flammable Liquid |
| Marine Pollutant: | NO |

EXCEPTION for Ground Shipping

DOT Limited Quantity: Up to 1L per inner packaging, 30 kg gross weight per package.

Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D".

TDG INFORMATION

| | |
|---------------------------------|---|
| TDG CLASS: | FLAMMABLE LIQUID 3 |
| SHIPPING NAME: | Flammable Liquid, n.o.s. (Acetone, Tetrahydrofuran) |
| UN NUMBER/PACKING GROUP: | UN 1993, PG II |

SECTION 15 - REGULATORY INFORMATION

| | | | |
|---|--|---|--|
| Precautionary Label Information: | Highly Flammable, Irritant | Ingredient Listings: | USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS) |
| Symbols: | F, Xi | | |
| Risk Phrases: | R11: Highly flammable. R20: Harmful by inhalation. R36/37: Irritating to eyes and respiratory system. | R66: Repeated exposure may cause skin dryness or cracking R67: Vapors may cause drowsiness and dizziness | |
| Safety Phrases: | S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking. S25: Avoid contact with eyes. | S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S33: Take precautionary measures against static discharges. S46: If swallowed, seek medical advice immediately and show this container or label. | |

SECTION 16 - OTHER INFORMATION

| | | |
|---|--|--|
| Specification Information: | | |
| Department issuing data sheet: | IPS, Safety Health & Environmental Affairs | All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances). |
| E-mail address: | <EHSinfo@ipscorp.com> | |
| Training necessary: | Yes, training in practices and procedures contained in product literature. | |
| Reissue date / reason for reissue: | 12/14/2011 / Updated GHS Standard Format | |
| Intended Use of Product: | Primer for PVC and CPVC Plastic Pipe | |

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.



Section B



GHS SAFETY DATA SHEET

WELD-ON FLOWGUARD GOLD® Low VOC Cement for CPVC Plastic Pipe

Date Revised: DEC 2011
Supersedes: FEB 2010

Section B

#3

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WELD-ON FLOWGUARD GOLD® Low VOC Cement for CPVC Plastic Pipe

PRODUCT USE: Low VOC Solvent Cement for CPVC Plastic Pipe

SUPPLIER:

MANUFACTURER: IPS Corporation
17109 South Main Street, Carson, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, 813-248-0585 (International)

Medical: Tel. 800.451.8346, 760.602.8703 3E Company (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

| Health | Environmental | Physical |
|---|--|-----------------------------|
| Acute Toxicity: Category 4 Skin Irritation: Category 3 Skin Sensitization: NO Eye: Category 2B | Acute Toxicity: None Known Chronic Toxicity: None Known | Flammable Liquid Category 2 |

GHS LABEL:



OR



Signal Word:
Danger

WHMIS CLASSIFICATION: CLASS B, DIVISION 2

Hazard Statements

H225: Highly flammable liquid and vapor
H319: Causes serious eye irritation
H226: Flammable liquid and vapour
H332: Harmful if inhaled
H335: May cause respiratory irritation
H336: May cause drowsiness or dizziness
EUH019: May form explosive peroxides
EUH066: Repeated exposure may cause skin dryness or cracking

Precautionary Statements

P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
P261: Avoid breathing dust/fume/gas/mist/vapors/spray
P280: Wear protective gloves/protective clothing/eye protection/face protection
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P337+P313: Get medical advice/attention
P403+P233: Store in a well ventilated place. Keep container tightly closed
P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

| | CAS# | EINECS # | REACH Pre-registration Number | CONCENTRATION % by Weight |
|---------------------------|----------|-----------|----------------------------------|------------------------------|
| Tetrahydrofuran (THF) | 109-99-9 | 203-726-8 | 05-2116297729-22-0000 | 30 - 40 |
| Methyl Ethyl Ketone (MEK) | 78-93-3 | 201-159-0 | 05-2116297728-24-0000 | 15 - 25 |
| Cyclohexanone | 108-94-1 | 203-631-1 | 05-2116297718-25-0000 | 10 - 18 |

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.
* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).
indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.
Unsuitable Extinguishing Media: Water spray or stream.
Exposure Hazards: Inhalation and dermal contact
Combustion Products: Oxides of carbon, hydrogen chloride and smoke

| | | | |
|--------------|--------|--------|------------|
| Health | HMIS 2 | NFPA 2 | 0-Minimal |
| Flammability | 3 | 3 | 1-Slight |
| Reactivity | 0 | 0 | 2-Moderate |
| PPE | B | | 3-Serious |
| | | | 4-Severe |

Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
Prevent contact with skin or eyes (see section 8).
Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up: Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat, drink or smoke while handling.
Storage: Store in ventilated room or shade below 33°C (90°F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

| EXPOSURE LIMITS: | Component | ACGIH TLV | ACGIH STEL | OSHA PEL | OSHA STEL: |
|------------------|---------------------------|-----------|------------|----------|------------|
| | Tetrahydrofuran (THF) | 50 ppm | 100 ppm | 200 ppm | |
| | Methyl Ethyl Ketone (MEK) | 200 ppm | 300 ppm | 200 ppm | |
| | Cyclohexanone | 20 ppm | 50 ppm | 50 ppm | |

Engineering Controls: Use local exhaust as needed.

Monitoring: Maintain breathing zone airborne concentrations below exposure limits.

Personal Protective Equipment (PPE):

Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.

Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.

Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above.
With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.



GHS SAFETY DATA SHEET

WELD-ON FLOWGUARD GOLD® Low VOC Cement for CPVC Plastic Pipe

Date Revised: DEC 2011

Supersedes: FEB 2010

Section B

#3

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|--|-------------------------------|---|
| Appearance: | Yellow, medium syrupy liquid | Odor Threshold: | 0.88 ppm (Cyclohexanone) |
| Odor: | Ketone | Boiling Range: | 66°C (151°F) to 156°C (313°F) |
| pH: | Not Applicable | Evaporation Rate: | > 1.0 (BUAC = 1) |
| Melting/Freezing Point: | -108.5°C (-163.3°F) Based on first melting component: THF | Flammability: | Category 2 |
| Boiling Point: | 66°C (151°F) Based on first boiling component: THF | Flammability Limits: | LEL: 1.1% based on Cyclohexanone UEL: 11.8% based on THF |
| Flash Point: | -20°C (-4°F) TCC based on THF | Vapor Pressure: | 129 mm Hg @ 20°C (68°F) based on THF |
| Specific Gravity: | 0.986 @23°C (73°F) | Vapor Density: | >2 (Air = 1) |
| Solubility: | Solvent portion soluble in water. Resin portion separates out. | Other Data: Viscosity: | Medium bodied |
| Partition Coefficient n-octanol/water: | Not Available | | |
| Auto-ignition Temperature: | 321°C (610°F) based on THF | | |
| Decomposition Temperature: | Not Applicable | | |
| VOC Content: | When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 490 g/l. | | |

SECTION 10 - STABILITY AND REACTIVITY

| | |
|--|--|
| Stability: | Stable |
| Hazardous decomposition products: | None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke. |
| Conditions to avoid: | Keep away from heat, sparks, open flame and other ignition sources. |
| Incompatible Materials: | Oxidizers, strong acids and bases, amines, ammonia |

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, Eye and Skin Contact

Acute symptoms and effects:

| | |
|----------------------|---|
| Inhalation: | Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages. |
| Eye Contact: | Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid. |
| Skin Contact: | Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact. |
| Ingestion: | May cause nausea, vomiting, diarrhea and mental sluggishness. |

Chronic (long-term) effects: None known to humans

Toxicity:

| | | |
|---------------------------|---|--|
| | LD ₅₀ | LC ₅₀ |
| Tetrahydrofuran (THF) | Oral: 2842 mg/kg (rat) | Inhalation 3 hrs. 21,000 mg/m ³ (rat) |
| Methyl Ethyl Ketone (MEK) | Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit) | Inhalation 8 hrs. 23,500 mg/m ³ (rat) |
| Cyclohexanone | Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit) | Inhalation 4 hrs. 8,000 PPM (rat) |

| | | | | | |
|-----------------------------|-----------------------|---------------------|-----------------------|---------------------------------|-----------------------------|
| Reproductive Effects | Teratogenicity | Mutagenicity | Embryotoxicity | Sensitization to Product | Synergistic Products |
| Not Established | Not Established | Not Established | Not Established | Not Established | Not Established |

SECTION 12 - ECOLOGICAL INFORMATION

| | |
|-------------------------|---|
| Ecotoxicity: | None Known |
| Mobility: | In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 490 g/l. |
| Degradability: | Biodegradable |
| Bioaccumulation: | Minimal to none |

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

| | |
|-------------------------------|--------------------------|
| Proper Shipping Name: | Adhesives |
| Hazard Class: | 3 |
| Secondary Risk: | None |
| Identification Number: | UN 1133 |
| Packing Group: | PG II |
| Label Required: | Class 3 Flammable Liquid |
| Marine Pollutant: | NO |

EXCEPTION for Ground Shipping

DOT Limited Quantity: Up to 5L per inner packaging, 30 kg gross weight per package.
Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D".

TDG INFORMATION

| | |
|---------------------------------|--------------------|
| TDG CLASS: | FLAMMABLE LIQUID 3 |
| SHIPPING NAME: | ADHESIVES |
| UN NUMBER/PACKING GROUP: | UN 1133, PG II |

SECTION 15 - REGULATORY INFORMATION

| | | | |
|---|---|---|--|
| Precautionary Label Information: | Highly Flammable, Irritant | Ingredient Listings: | USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS) |
| Symbols: | F, Xi | | |
| Risk Phrases: | R11: Highly flammable. R19: May form explosive peroxide R20: Harmful by inhalation. | R36/37: Irritating to eyes and respiratory system. R66: Repeated exposure may cause skin dryness or cracking R67: Vapors may cause drowsiness and dizziness | |
| Safety Phrases: | S2: Keep out of the reach of children S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking. S25: Avoid contact with eyes. | S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S29: Do not empty into drains. S33: Take precautionary measures against static discharges. S46: If swallowed, seek medical advice immediately and show this container or label. | |

SECTION 16 - OTHER INFORMATION

| | | |
|---|--|--|
| Specification Information: | | |
| Department issuing data sheet: | IPS, Safety Health & Environmental Affairs | All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances). |
| E-mail address: | <EHSinfo@ipscorp.com> | |
| Training necessary: | Yes, training in practices and procedures contained in product literature. | |
| Reissue date / reason for reissue: | 12/14/2011 / Updated GHS Standard Format | |
| Intended Use of Product: | Solvent Cement for CPVC Plastic Pipe | |

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

Section B





GHS SAFETY DATA SHEET

WELD-ON® 729™ Low VOC Cement for CPVC Plastic Pipe

Date Revised: DEC 2011

Supersedes: NOV 2010

Section B

#4

SECTION I - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WELD-ON® 729™ Low VOC Cement for CPVC Plastic Pipe

PRODUCT USE: Low VOC Solvent Cement for CPVC Plastic Pipe

SUPPLIER:

MANUFACTURER:

IPS Corporation
17109 South Main Street, Carson, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, 813-248-0585 (International)

Medical: Tel. 800.451.8346, 760.602.8703 3E Company (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

| Health | Environmental | Physical |
|---|--|-----------------------------|
| Acute Toxicity: Category 4 Skin Irritation: Category 3 Skin Sensitization: NO Eye: Category 2B | Acute Toxicity: None Known Chronic Toxicity: None Known | Flammable Liquid Category 2 |

GHS LABEL:



OR



Signal Word:
Danger

WHMIS CLASSIFICATION: CLASS B, DIVISION 2

Hazard Statements

H225: Highly flammable liquid and vapor
H319: Causes serious eye irritation
H335: May cause respiratory irritation
H336: May cause drowsiness or dizziness
EUH019: May form explosive peroxides

Precautionary Statements

P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
P261: Avoid breathing dust/fume/gas/mist/vapors/spray
P280: Wear protective gloves/protective clothing/eye protection/face protection
P337+P313: Get medical advice/attention
P403+P233: Store in a well ventilated place. Keep container tightly closed
P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

| | CAS# | EINECS # | REACH Pre-registration Number | CONCENTRATION % by Weight |
|---------------------------|----------|-----------|----------------------------------|------------------------------|
| Tetrahydrofuran (THF) | 109-99-9 | 203-726-8 | 05-2116297729-22-0000 | 50 - 70 |
| Methyl Ethyl Ketone (MEK) | 78-93-3 | 201-159-0 | 05-2116297728-24-0000 | 2 - 10 |
| Cyclohexanone | 108-94-1 | 203-631-1 | 05-2116297718-25-0000 | 5 - 15 |

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.
* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).
indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.
Unsuitable Extinguishing Media: Water spray or stream.
Exposure Hazards: Inhalation and dermal contact
Combustion Products: Oxides of carbon, hydrogen chloride and smoke

| | | | |
|--------------|---|---|------------|
| Health | 2 | 2 | 0-Minimal |
| Flammability | 3 | 3 | 1-Slight |
| Reactivity | 0 | 0 | 2-Moderate |
| PPE | B | | 3-Serious |
| | | | 4-Severe |

Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
Prevent contact with skin or eyes (see section 8).
Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up: Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat, drink or smoke while handling.
Storage: Store in ventilated room or shade below 33°C (90°F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

| EXPOSURE LIMITS: | Component | ACGIH TLV | ACGIH STEL | OSHA PEL | OSHA STEL: |
|------------------|---------------------------|-----------|------------|----------|------------|
| | Tetrahydrofuran (THF) | 50 ppm | 100 ppm | 200 ppm | |
| | Methyl Ethyl Ketone (MEK) | 200 ppm | 300 ppm | 200 ppm | |
| | Cyclohexanone | 20 ppm | 50 ppm | 50 ppm | |

Engineering Controls: Use local exhaust as needed.

Monitoring: Maintain breathing zone airborne concentrations below exposure limits.

Personal Protective Equipment (PPE):

Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.

Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.

Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above.
With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.



GHS SAFETY DATA SHEET

WELD-ON® 729™ Low VOC Cement for CPVC Plastic Pipe

Date Revised: DEC 2011

Supersedes: NOV 2010

Section B #4

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|--|-------------------------------|---|
| Appearance: | Gray, extra heavy syrupy liquid | Odor Threshold: | 0.88 ppm (Cyclohexanone) |
| Odor: | Ketone | Boiling Range: | 66°C (151°F) to 156°C (313°F) |
| pH: | Not Applicable | Evaporation Rate: | > 1.0 (BUAC = 1) |
| Melting/Freezing Point: | -108.5°C (-163.3°F) Based on first melting component: THF | Flammability: | Category 2 |
| Boiling Point: | 66°C (151°F) Based on first boiling component: THF | Flammability Limits: | LEL: 1.1% based on Cyclohexanone |
| Flash Point: | -20°C (-4°F) TCC based on THF | | UEL: 11.8% based on THF |
| Specific Gravity: | 1.0 @23°C (73°F) | Vapor Pressure: | 129 mm Hg @ 20°C (68°F) based on THF |
| Solubility: | Solvent portion soluble in water. Resin portion separates out. | Vapor Density: | >2 (Air = 1) |
| Partition Coefficient n-octanol/water: | Not Available | Other Data: Viscosity: | Extra heavy bodied |
| Auto-ignition Temperature: | 321°C (610°F) based on THF | | |
| Decomposition Temperature: | Not Applicable | | |
| VOC Content: | When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 490 g/l. | | |

SECTION 10 - STABILITY AND REACTIVITY

| | |
|--|--|
| Stability: | Stable |
| Hazardous decomposition products: | None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke. |
| Conditions to avoid: | Keep away from heat, sparks, open flame and other ignition sources. |
| Incompatible Materials: | Oxidizers, strong acids and bases, amines, ammonia |

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, Eye and Skin Contact

Acute symptoms and effects:

| | |
|----------------------|---|
| Inhalation: | Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages. |
| Eye Contact: | Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid. |
| Skin Contact: | Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact. |
| Ingestion: | May cause nausea, vomiting, diarrhea and mental sluggishness. |

Chronic (long-term) effects: None known to humans

| | | |
|---------------------------|---|--|
| Toxicity: | LD ₅₀ | LC ₅₀ |
| Tetrahydrofuran (THF) | Oral: 2842 mg/kg (rat) | Inhalation 3 hrs. 21,000 mg/m ³ (rat) |
| Methyl Ethyl Ketone (MEK) | Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit) | Inhalation 8 hrs. 23,500 mg/m ³ (rat) |
| Cyclohexanone | Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit) | Inhalation 4 hrs. 8,000 PPM (rat) |

| Reproductive Effects | Teratogenicity | Mutagenicity | Embryotoxicity | Sensitization to Product | Synergistic Products |
|-----------------------------|-----------------------|---------------------|-----------------------|---------------------------------|-----------------------------|
| Not Established | Not Established | Not Established | Not Established | Not Established | Not Established |

SECTION 12 - ECOLOGICAL INFORMATION

| | |
|-------------------------|---|
| Ecotoxicity: | None Known |
| Mobility: | In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 490 g/l. |
| Degradability: | Biodegradable |
| Bioaccumulation: | Minimal to none. |

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

| | |
|-------------------------------|--------------------------|
| Proper Shipping Name: | Adhesives |
| Hazard Class: | 3 |
| Secondary Risk: | None |
| Identification Number: | UN 1133 |
| Packing Group: | PG II |
| Label Required: | Class 3 Flammable Liquid |
| Marine Pollutant: | NO |

EXCEPTION for Ground Shipping

DOT Limited Quantity: Up to 5L per inner packaging, 30 kg gross weight per package.
Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D".

TDG INFORMATION

| | |
|---------------------------------|--------------------|
| TDG CLASS: | FLAMMABLE LIQUID 3 |
| SHIPPING NAME: | ADHESIVES |
| UN NUMBER/PACKING GROUP: | UN 1133, PG II |

SECTION 15 - REGULATORY INFORMATION

| | | | |
|---|--|--|--|
| Precautionary Label Information: | Highly Flammable, Irritant | Ingredient Listings: | USA TSCA, Europe EINECS, Canada DSL, Australia |
| Symbols: | F, Xi | | AICS, Korea ECL/TCCL, Japan MITI (ENCS) |
| Risk Phrases: | R11: Highly flammable. R36/37: Irritating to eyes and respiratory system. | R66: Repeated exposure may cause skin dryness or cracking R67: Vapors may cause drowsiness and dizziness | |
| Safety Phrases: | S2: Keep out of the reach of children S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking. | S25: Avoid contact with eyes. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S33: Take precautionary measures against static discharges. | |

SECTION 16 - OTHER INFORMATION

| | | |
|---|--|---|
| Specification Information: | | |
| Department issuing data sheet: | IPS, Safety Health & Environmental Affairs | All ingredients are compliant with the requirements of the European |
| E-mail address: | <EHSinfo@ipscorp.com> | Directive on RoHS (Restriction of Hazardous Substances). |
| Training necessary: | Yes, training in practices and procedures contained in product literature. | |
| Reissue date / reason for reissue: | 12/14/2011 / Updated GHS Standard Format | |
| Intended Use of Product: | Solvent Cement for CPVC Plastic Pipe | |

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

Section B





GHS SAFETY DATA SHEET

WELD-ON® 713™ Low VOC Cement for CPVC Plastic Pipe

Date Revised: DEC 2011

Supersedes: FEB 2010

Section B

#5

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WELD-ON® 713™ Low VOC Cement for CPVC Plastic Pipe

PRODUCT USE: Low VOC Solvent Cement for CPVC Plastic Pipe

SUPPLIER:

MANUFACTURER: IPS Corporation

17109 South Main Street, Carson, CA 90248-3127

P.O. Box 379, Gardena, CA 90247-0379

Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, 813-248-0585 (International)

Medical: Tel. 800.451.8346, 760.602.8703 3E Company (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

| Health | Environmental | Physical |
|---|--|-----------------------------|
| Acute Toxicity: Category 4 Skin Irritation: Category 3 Skin Sensitization: NO Eye: Category 2B | Acute Toxicity: None Known Chronic Toxicity: None Known | Flammable Liquid Category 2 |

GHS LABEL:



OR



Signal Word:
Danger

WHMIS CLASSIFICATION: CLASS B, DIVISION 2

Hazard Statements

H225: Highly flammable liquid and vapor
H319: Causes serious eye irritation
H332: Harmful if inhaled
H335: May cause respiratory irritation
H336: May cause drowsiness or dizziness
EUH019: May form explosive peroxides

Precautionary Statements

P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
P261: Avoid breathing dust/fume/gas/mist/vapors/spray
P280: Wear protective gloves/protective clothing/eye protection/face protection
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P403+P233: Store in a well ventilated place. Keep container tightly closed
P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

| | CAS# | EINECS # | REACH Pre-registration Number | CONCENTRATION % by Weight |
|---------------------------|----------|-----------|----------------------------------|------------------------------|
| Tetrahydrofuran (THF) | 109-99-9 | 203-726-8 | 05-2116297729-22-0000 | 40 - 55 |
| Methyl Ethyl Ketone (MEK) | 78-93-3 | 201-159-0 | 05-2116297728-24-0000 | 10 - 25 |
| Cyclohexanone | 108-94-1 | 203-631-1 | 05-2116297718-25-0000 | 10 - 25 |
| Acetone | 67-64-1 | 200-662-2 | 05-2116297713-35-0000 | 5 - 15 |

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.
Unsuitable Extinguishing Media: Water spray or stream.
Exposure Hazards: Inhalation and dermal contact
Combustion Products: Oxides of carbon, hydrogen chloride and smoke

| | | | |
|--------------|--------|--------|------------|
| Health | HMIS 2 | NFPA 2 | 0-Minimal |
| Flammability | 3 | 3 | 1-Slight |
| Reactivity | 0 | 0 | 2-Moderate |
| PPE | B | | 3-Serious |
| | | | 4-Severe |

Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
Prevent contact with skin or eyes (see section 8).
Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up: Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat, drink or smoke while handling.
Storage: Store in ventilated room or shade below 33°C (90°F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

| EXPOSURE LIMITS: | Component | ACGIH TLV | ACGIH STEL | OSHA PEL | OSHA STEL: |
|------------------|---------------------------|-----------|------------|----------|------------|
| | Tetrahydrofuran (THF) | 50 ppm | 100 ppm | 200 ppm | |
| | Methyl Ethyl Ketone (MEK) | 200 ppm | 300 ppm | 200 ppm | |
| | Cyclohexanone | 20 ppm | 50 ppm | 50 ppm | |
| | Acetone | 500 ppm | 750 ppm | 1000 ppm | |

Engineering Controls: Use local exhaust as needed.

Monitoring: Maintain breathing zone airborne concentrations below exposure limits.

Personal Protective Equipment (PPE):

Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.

Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.

Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above.
With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.



GHS SAFETY DATA SHEET

WELD-ON® 713™ Low VOC Cement for CPVC Plastic Pipe

Date Revised: DEC 2011

Supersedes: FEB 2010

Section B

#5

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|--|-------------------------------|---|
| Appearance: | Orange, regular syrupy liquid | Odor Threshold: | 0.88 ppm (Cyclohexanone) |
| Odor: | Ketone | Boiling Range: | 56 °C (133 °F) to 156 °C (313 °F) |
| pH: | Not Applicable | Evaporation Rate: | > 1.0 (BUAC = 1) |
| Melting/Freezing Point: | -108.5 °C (-163.3 °F) Based on first melting component: THF | Flammability: | Category 2 |
| Boiling Point: | 56 °C (133 °F) Based on first boiling component: Acetone | Flammability Limits: | LEL: 1.1% based on Cyclohexanone |
| Flash Point: | -20 °C (-4 °F) TCC based on Acetone | | UEL: 12.8% based on Acetone |
| Specific Gravity: | 0.925 @23 °C (73 °F) | Vapor Pressure: | 190 mm Hg @ 20 °C (68 °F) Acetone |
| Solubility: | Solvent portion soluble in water. Resin portion separates out. | Vapor Density: | >2.0 (Air = 1) |
| Partition Coefficient n-octanol/water: | Not Available | Other Data: Viscosity: | Regular bodied |
| Auto-ignition Temperature: | 321 °C (610 °F) based on THF | | |
| Decomposition Temperature: | Not Applicable | | |
| VOC Content: | When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 490 g/l. | | |

SECTION 10 - STABILITY AND REACTIVITY

| | |
|--|--|
| Stability: | Stable |
| Hazardous decomposition products: | None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke. |
| Conditions to avoid: | Keep away from heat, sparks, open flame and other ignition sources. |
| Incompatible Materials: | Oxidizers, strong acids and bases, amines, ammonia |

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, Eye and Skin Contact

Acute symptoms and effects:

| | |
|----------------------|---|
| Inhalation: | Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages. |
| Eye Contact: | Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid. |
| Skin Contact: | Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact. |
| Ingestion: | May cause nausea, vomiting, diarrhea and mental sluggishness. |

Chronic (long-term) effects: None known to humans

| | | |
|---------------------------|---|--|
| Toxicity: | LD ₅₀ | LC ₅₀ |
| Tetrahydrofuran (THF) | Oral: 2842 mg/kg (rat) | Inhalation 3 hrs. 21,000 mg/m ³ (rat) |
| Methyl Ethyl Ketone (MEK) | Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit) | Inhalation 8 hrs. 23,500 mg/m ³ (rat) |
| Cyclohexanone | Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit) | Inhalation 4 hrs. 8,000 PPM (rat) |
| Acetone | Oral: 5800 mg/kg (rat) | Inhalation 50,100 mg/m ³ (rat) |

| | | | | | |
|-----------------------------|-----------------------|---------------------|-----------------------|---------------------------------|-----------------------------|
| Reproductive Effects | Teratogenicity | Mutagenicity | Embryotoxicity | Sensitization to Product | Synergistic Products |
| Not Established | Not Established | Not Established | Not Established | Not Established | Not Established |

SECTION 12 - ECOLOGICAL INFORMATION

| | |
|-------------------------|---|
| Ecotoxicity: | None Known |
| Mobility: | In normal use, emission of volatile organic compounds (VOC's) to the air takes place. Typically at a rate of ≤ 490 g/l. |
| Degradability: | Biodegradable |
| Bioaccumulation: | Minimal to none. |

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

| | |
|-------------------------------|--------------------------|
| Proper Shipping Name: | Adhesives |
| Hazard Class: | 3 |
| Secondary Risk: | None |
| Identification Number: | UN 1133 |
| Packing Group: | PG II |
| Label Required: | Class 3 Flammable Liquid |
| Marine Pollutant: | NO |

EXCEPTION for Ground Shipping

DOT Limited Quantity: Up to 5L per inner packaging, 30 kg gross weight per package.

Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D".

TDG INFORMATION

| | |
|---------------------------------|--------------------|
| TDG CLASS: | FLAMMABLE LIQUID 3 |
| SHIPPING NAME: | ADHESIVES |
| UN NUMBER/PACKING GROUP: | UN 1133, PG II |

SECTION 15 - REGULATORY INFORMATION

| | | | |
|---|--|--|--|
| Precautionary Label Information: | Highly Flammable, Irritant | Ingredient Listings: | USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS) |
| Symbols: | F, Xi | | |
| Risk Phrases: | R11: Highly flammable. R20-Harmful by inhalation. R36/37: Irritating to eyes and respiratory system. | R66: Repeated exposure may cause skin dryness or cracking R67: Vapors may cause drowsiness and dizziness | |
| Safety Phrases: | S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking. S25: Avoid contact with eyes. | S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S33: Take precautionary measures against static discharges. S46: If swallowed, seek medical advice immediately and show this container or label. | |

SECTION 16 - OTHER INFORMATION

| | | |
|---|--|--|
| Specification Information: | | |
| Department issuing data sheet: | IPS, Safety Health & Environmental Affairs | All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances). |
| E-mail address: | <EHSinfo@ipscorp.com> | |
| Training necessary: | Yes, training in practices and procedures contained in product literature. | |
| Reissue date / reason for reissue: | 12/14/2011 / Updated GHS Standard Format | |
| Intended Use of Product: | Solvent Cement for CPVC Plastic Pipe | |

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

Section B



SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WELD-ON® P-70™ Low VOC Primer for PVC and CPVC Plastic Pipe

PRODUCT USE: Low VOC Primer for PVC and CPVC Plastic Pipe

SUPPLIER:

MANUFACTURER: IPS Corporation

17109 South Main Street, Carson, CA 90248-3127

P.O. Box 379, Gardena, CA 90247-0379

Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, 813-248-0585 (International)

Medical: Tel. 800.451.8346, 760.602.8703 3E Company (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

| Health | Environmental | Physical |
|-----------------------------|------------------------------|-----------------------------|
| Acute Toxicity: Category 4 | Acute Toxicity: None Known | Flammable Liquid Category 2 |
| Skin Irritation: Category 3 | Chronic Toxicity: None Known | |
| Skin Sensitization: NO | | |
| Eye: Category 2B | | |

GHS LABEL:



OR



Signal Word:
Danger

WHMIS CLASSIFICATION: CLASS B, DIVISION 2

Hazard Statements

H225: Highly flammable liquid and vapor

H319: Causes serious eye irritation

H332: Harmful if inhaled

H335: May cause respiratory irritation

H336: May cause drowsiness or dizziness

EUH019: May form explosive peroxides

Precautionary Statements

P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking

P261: Avoid breathing dust/fume/gas/mist/vapors/spray

P280: Wear protective gloves/protective clothing/eye protection/face protection

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

P403+P233: Store in a well ventilated place. Keep container tightly closed

P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

| | CAS# | EINECS # | REACH Pre-registration Number | CONCENTRATION % by Weight |
|---------------------------|----------|-----------|----------------------------------|------------------------------|
| Tetrahydrofuran (THF) | 109-99-9 | 203-726-8 | 05-2116297729-22-0000 | 45 - 59 |
| Methyl Ethyl Ketone (MEK) | 78-93-3 | 201-159-0 | 05-2116297728-24-0000 | 19 - 29 |
| Cyclohexanone | 108-94-1 | 203-631-1 | 05-2116297718-25-0000 | 5 - 15 |
| Acetone | 67-64-1 | 200-662-2 | 05-2116297713-35-0000 | 5 - 20 |

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

| | |
|---------------------------|---|
| Contact with eyes: | Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately. |
| Skin contact: | Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice. |
| Inhalation: | Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice. |
| Ingestion: | Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately. |

SECTION 5 - FIREFIGHTING MEASURES

| | | | | |
|--|--|--------------|------|-----------|
| Suitable Extinguishing Media: | Dry chemical powder, carbon dioxide gas, foam, Halon, water fog. | HMIS | NFPA | 0-Minimal |
| Unsuitable Extinguishing Media: | Water spray or stream. | Health | 2 | 2 |
| Exposure Hazards: | Inhalation and dermal contact | Flammability | 3 | 3 |
| Combustion Products: | Oxides of carbon and smoke | Reactivity | 0 | 0 |
| | | PPE | B | 4-Severe |

Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| Personal precautions: | Keep away from heat, sparks and open flame. Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment. Prevent contact with skin or eyes (see section 8). |
| Environmental Precautions: | Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course. |
| Methods for Cleaning up: | Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel. |
| Materials not to be used for clean up: | Aluminum or plastic containers |

SECTION 7 - HANDLING AND STORAGE

| | |
|------------------|---|
| Handling: | Avoid breathing of vapor, avoid contact with eyes, skin and clothing. Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods. Do not eat, drink or smoke while handling. |
| Storage: | Store in ventilated room or shade below 44 °C (110 °F) and away from direct sunlight. Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates. Follow all precautionary information on container label, product bulletins and solvent cementing literature. |

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

| EXPOSURE LIMITS: | Component | ACGIH TLV | ACGIH STEL | OSHA PEL | OSHA STEL: |
|------------------|---------------------------|-----------|------------|----------|------------|
| | Tetrahydrofuran (THF) | 50 ppm | 100 ppm | 200 ppm | |
| | Methyl Ethyl Ketone (MEK) | 200 ppm | 300 ppm | 200 ppm | |
| | Cyclohexanone | 20 ppm | 50 ppm | 50 ppm | |
| | Acetone | 500 ppm | 750 ppm | 1000 ppm | |

Engineering Controls: Use local exhaust as needed.

Monitoring: Maintain breathing zone airborne concentrations below exposure limits.

Personal Protective Equipment (PPE):

Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.

Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.

Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above.
With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.



GHS SAFETY DATA SHEET

WELD-ON® P-70™ Low VOC Primer for PVC and CPVC Plastic Pipe

Date Revised: DEC 2011

Supersedes: OCT 2010

Section B

#6

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|--|-------------------------------|---|
| Appearance: | Clear or purple, thin liquid | Odor Threshold: | 0.88 ppm (Cyclohexanone) |
| Odor: | Ethereal | Boiling Range: | 56 °C (133 °F) to 156 °C (313 °F) |
| pH: | Not Applicable | Evaporation Rate: | > 1.0 (BUAC = 1) |
| Melting/Freezing Point: | -108.5 °C (-163.3 °F) Based on first melting component: THF | Flammability: | Category 2 |
| Boiling Point: | 56 °C (133 °F) Based on first boiling component: Acetone | Flammability Limits: | LEL: 1.1% based on Cyclohexanone |
| Flash Point: | -20 °C (-4 °F) TCC based on Acetone | | UEL: 12.8% based on Acetone |
| Specific Gravity: | 0.858 @23 °C (73 °F) | Vapor Pressure: | 190 mm Hg @ 20 °C (68 °F) Acetone |
| Solubility: | Solvent portion soluble in water. Resin portion separates out. | Vapor Density: | >2.0 (Air = 1) |
| Partition Coefficient n-octanol/water: | Not Available | Other Data: Viscosity: | Water-thin |
| Auto-ignition Temperature: | 321 °C (610 °F) based on THF | | |
| Decomposition Temperature: | Not Applicable | | |
| VOC Content: | When applied as directed, per SCAQMD Rule 1168, Test Method 316A, VOC content is: ≤ 550 g/l. | | |

SECTION 10 - STABILITY AND REACTIVITY

| | |
|--|---|
| Stability: | Stable |
| Hazardous decomposition products: | None in normal use. When forced to burn, this product gives off oxides of carbon and smoke. |
| Conditions to avoid: | Keep away from heat, sparks, open flame and other ignition sources. |
| Incompatible Materials: | Oxidizers, strong acids and bases, amines, ammonia |

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, Eye and Skin Contact

Acute symptoms and effects:

| | |
|----------------------|---|
| Inhalation: | Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages. |
| Eye Contact: | Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid. |
| Skin Contact: | Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact. |
| Ingestion: | May cause nausea, vomiting, diarrhea and mental sluggishness. |

Chronic (long-term) effects:

None known to humans

Toxicity:

LD₅₀

LC₅₀

| | | |
|---------------------------|---|--|
| Tetrahydrofuran (THF) | Oral: 2842 mg/kg (rat) | Inhalation 3 hrs. 21,000 mg/m ³ (rat) |
| Methyl Ethyl Ketone (MEK) | Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit) | Inhalation 8 hrs. 23,500 mg/m ³ (rat) |
| Cyclohexanone | Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit) | Inhalation 4 hrs. 8,000 PPM (rat) |
| Acetone | Oral: 5800 mg/kg (rat) | Inhalation 50,100 mg/m ³ (rat) |

| Reproductive Effects | Teratogenicity | Mutagenicity | Embryotoxicity | Sensitization to Product | Synergistic Products |
|-----------------------------|-----------------------|---------------------|-----------------------|---------------------------------|-----------------------------|
| Not Established | Not Established | Not Established | Not Established | Not Established | Not Established |

SECTION 12 - ECOLOGICAL INFORMATION

| | |
|-------------------------|---|
| Ecotoxicity: | None Known |
| Mobility: | In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 550 g/l. |
| Degradability: | Biodegradable |
| Bioaccumulation: | Minimal to none. |

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

| | |
|-------------------------------|---|
| Proper Shipping Name: | Flammable Liquid, n.o.s. (Acetone, Tetrahydrofuran) |
| Hazard Class: | 3 |
| Secondary Risk: | None |
| Identification Number: | UN 1993 |
| Packing Group: | PG II |
| Label Required: | Class 3 Flammable Liquid |
| Marine Pollutant: | NO |

EXCEPTION for Ground Shipping

DOT Limited Quantity: Up to 1L per inner packaging, 30 kg gross weight per package.

Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D" .

TDG INFORMATION

| | |
|---------------------------------|---|
| TDG CLASS: | FLAMMABLE LIQUID 3 |
| SHIPPING NAME: | Flammable Liquid, n.o.s. (Acetone, Tetrahydrofuran) |
| UN NUMBER/PACKING GROUP: | UN 1993, PG II |

SECTION 15 - REGULATORY INFORMATION

| | | | |
|---|--|-----------------------------|---|
| Precautionary Label Information: | Highly Flammable, Irritant | Ingredient Listings: | USA TSCA, Europe EINECS, Canada DSL, Australia |
| Symbols: | F, Xi | | AICS, Korea ECL/TCCL, Japan MITI (ENCS) |
| Risk Phrases: | R11: Highly flammable. R20: Harmful by inhalation. R36/37: Irritating to eyes and respiratory system. | | R66: Repeated exposure may cause skin dryness or cracking R67: Vapors may cause drowsiness and dizziness |
| Safety Phrases: | S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking. S25: Avoid contact with eyes. | | S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S33: Take precautionary measures against static discharges. S46: If swallowed, seek medical advice immediately and show this container or label. |

SECTION 16 - OTHER INFORMATION

| | | |
|---|--|---|
| Specification Information: | | |
| Department issuing data sheet: | IPS, Safety Health & Environmental Affairs | All ingredients are compliant with the requirements of the European |
| E-mail address: | <EHSinfo@ipscorp.com> | Directive on RoHS (Restriction of Hazardous Substances). |
| Training necessary: | Yes, training in practices and procedures contained in product literature. | |
| Reissue date / reason for reissue: | 12/14/2011 / Updated GHS Standard Format | |
| Intended Use of Product: | Primer for PVC and CPVC Plastic Pipe | |

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

Oatey, Solvents & Cements

Contents:

- 1. HD PVC CEMENT**
- 2. REG,. PVC CEMENT**
- 3. PURPLE PRIMER**
- 4. CPVC CEMENT. GOLD**
- 5. HD ORANGE CEMENT**
- 6. CLEAR PRIMER**
- 7. PURPLE PRIMER W/CLEANER**
- 8. RAIN OR SHINE CEMENT**
- 9. ALL PURPOSE CEMENT**

SECTION C



SECTION C



MATERIAL SAFETY DATA SHEET

SECTION C

#1

MSDS Number: 1102C

Section 1

PRODUCT AND COMPANY IDENTIFICATION

Trade Name: OATEY CANADIAN PVC HEAVY DUTY CLEAR or GREY CEMENT
Product Nos.: Clear 31011, 31476, 31477, 31478, 31479 Grey 31510, 31511, 31512, 31513, 31514
Product Use: Cement for PVC Plastic Pipe
Formula: PVC Resin in Solvent Solution
Synonyms: PVC Plastic Pipe Cement
Firm Name & Address: Oatey Company 4700 West 160th Street, Cleveland, Ohio 44135
www.oatey.com
Firm Phone No: (216) 267-7100
Emergency Phone Nos.: For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
Prepared by: Technical Department
Preparation Date: 09/11/2012

Section 2 HAZARDS IDENTIFICATION

Emergency Overview:

Clear or Gray

liquid with an ether-like odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting, diarrhea and kidney or liver disorders. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.

Section 3 COMPOSITION/INFORMATION ON INGREDIENTS

| INGREDIENTS: | %wt/wt : | CAS NUMBER: | ACGIH TLV TWA: | OSHA PEL TWA | OTHER: |
|---|----------|-------------|------------------------------|---------------------|--------------|
| Tetrahydrofuran | 30 - 60% | 109-99-9 | 50 ppm(skin) 100 ppm STEL | 200 ppm | 25 ppm (Mfg) |
| Methyl Ethyl Ketone | 7 - 13% | 78-93-3 | 200 ppm 300 ppm | 200 ppm | None |
| Acetone | 10 - 20% | 67-64-1 | 500 ppm 750 ppm STEL | 1000 ppm | None |
| PVC Resin (Non-hazardous) | 10 - 20% | 9002-86-2 | 10 mg/m3 | 15 mg/m3 | None |
| Cyclohexanone | 10 - 30% | 108-94-1 | 20 ppm(skin) 50 ppm STEL | 50 ppm | None |
| Amorphous Fumed Silica (Non-hazardous) | 1 - 5% | 112945-52-5 | 10 mg/m3 | None Established | None |

OSHA Hazard Classification: Flammable, irritant, organ effects

Section 4 FIRST AID MEASURES

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber's Hand Cleaner or baby oil.
Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

SECTION C

#1

Section 5 FIRE FIGHTING MEASURES

Flashpoint / Method: 14 - 23 Degrees F. (-10 to -5 Degrees C) / CCCFP

Flammability: LEL = 1.8 % Volume, UEL = 11.8 % Volume

Extinguishing Media: Use dry chemical, CO₂, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.

Special Fire Fighting Procedure: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored

Unusual Fire And Explosion Hazards: Extremely flammable liquid. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

Hazardous Decomposition Products: Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

Section 6 ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Remove all sources of ignition and ventilate area. Stop leak if it can be done without risk. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with an inert absorbent such as sand, earth or other non-combusting material. Put absorbent material in covered, labeled metal containers. Prevent liquid from entering watercourses, sewers and natural waterways. Report releases to authorities as required. See Section 13 for disposal information.

Section 7 HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use.

Storage: Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.

Other: "Empty" containers retain product residue and can be hazardous. Follow all MSDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

Section 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.

Respiratory Protection: For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Skin Protection: Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm)

Eye Protection: to avoid prolonged skin contact.
Safety glasses with side shields or safety goggles.

Section 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 151 Degrees F / 66 Degrees C
Melting Point: Not applicable
Vapor Pressure: 145 mmHg @ 20 Degrees C
Vapor Density: (Air = 1) 2.5
Volatile Components: 80-84%
Solubility In Water: Negligible
pH: Not applicable
Specific Gravity: 0.94 +/- 0.02 @ 20 Degrees C
Evaporation Rate: (BUAC = 1) = 5.5 - 8.0
Appearance: Clear or Gray Liquid
Odor: Ether-Like
Will Dissolve In: Tetrahydrofuran
Material Is: Liquid

SECTION C

#1

Section 10 STABILITY AND REACTIVITY

Stability: Stable.
Conditions To Avoid: Avoid heat, sparks, flames and other sources of ignition.
Hazardous Decomposition Products: Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.
Incompatibility/ Materials To Avoid: Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.
Hazardous Polymerization: Will not occur.

Section 11 TOXICOLOGICAL INFORMATION

Inhalation: Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.
Skin: May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.
Eye: Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.
Ingestion: Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.
Chronic Toxicity: Prolonged or repeated overexposure cause dermatitis and damage to the kidney, liver, lungs and central nervous system.
Toxicity Data: Acetone: Oral rat LD50: 5,800 mg/kg
Inhalation rat LC50: 50,100 mg/m3/8 hours
Cyclohexanone: Oral rat LD50: 1,620 mg/kg
Inhalation rat LC50: 8,000 ppm/4 hours
Skin rabbit LD50: 1 mL/kg
Tetrahydrofuran: Oral rat LD50: 1,650 mg/kg
Inhalation rat LC50: 21,000 ppm/3 hours
Methyl Ethyl Ketone: Oral rat LD50: 2,737 mg/kg
Inhalation rat LC50: 23,500 mg/m3/8 hours
Skin rabbit LD50: 6,480 mg/kg
Sensitization: None of the components are known to cause sensitization.
Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA. The National Toxicology Program has reported that

exposure of mice and rats to tetrahydrofuran (THF) vapor levels up to 1800 ppm 6 hr/day, 5 days/week for their lifetime caused an increased incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health is unclear at this time, and may be related to "species specific" effects. Elevated incidences of tumors in humans have not been reported for THF. ACGIH has classified cyclohexanone (CYH) and tetrahydrofuran as "A3," Confirmed Animal Carcinogens with Unknown Relevance to Humans.

SECTION C #1

Mutagenicity: Cyclohexanone has been positive in bacterial and mammalian tests. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.

Reproductive Toxicity: Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

Medical Conditions Aggravated By Exposure: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

Section 12 ECOLOGICAL INFORMATION

This product is not expected to be toxic to aquatic organisms.
 Cyclohexanone: 96 hour LC50 values for fish is over 100 mg/l.
 Tetrahydrofuran: 96 hour LC50 fathead minnow: 2160 mg/L.
 Acetone: 96 hour LC50 for fish is greater than 100 mg/L.
 Methyl Ethyl Ketone: 96 hour LC50 for fish is greater than 100 mg/L.

VOC Information: This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.

VOC Level: Maximum 510 g/L per SCAQMD Test Method 316A.

Section 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.

RCRA Hazardous Waste Number: U002, U057, U159, U213

EPA Hazardous Waste ID Number: D001, D035, F003, F0005

EPA Hazard Waste Number: Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content)

Section 14 TRANSPORT INFORMATION

| | <u>Less than 1 Liter (0.3 gal)</u> | <u>Greater than 1 Liter (0.3 gal)</u> |
|-----------------------|--|---------------------------------------|
| DOT | | |
| UN/NA Number: | None | UN1133 |
| Proper Shipping Name: | Consumer Commodity | Adhesives |
| Hazard Class: | ORM-D | 3 |
| Packing Group: | None | PGII |
| Hazard Labels: | None | Flammable Liquid |
| IMDG | | |
| UN Number: | UN1133 | UN1133 |
| Proper Shipping Name: | Adhesives | Adhesives |
| Hazard Class: | 3 | 3 |
| Packing Group: | II | II |
| Label: | None (Limited Quantities are expected from labeling) | Class 3 (Flammable Liquid) |
| Flashpoint (deg C) | -10 to -5 Degrees C | -10 to -5 Degrees C |

Section 15 REGULATORY INFORMATION

Hazard Category for Acute Health, Chronic Health, Flammable

Section 311/312:

Section 302 This product does not contain chemicals regulated under SARA Section 302.
Extremely Hazardous Substances (TPQ):

Section 313 Toxic Chemicals: This product does not contain chemicals subject to SARA Section 313 Reporting requirements. **SECTION C**

CERCLA 103 Spills of this product over the RQ (reportable quantity) must be reported **#1**
Reportable to the National Response Center. The RQ for the product, based on the RQ
Quantity: for Tetrahydrofuran (60% maximum) of 1,000 lbs, is 1,667 lbs.

Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product contains trace amounts of chemicals known to the State of California to cause cancer. Under normal use conditions, exposure to these chemicals at levels above the State of California "No Significant Risk Level" (NSRL) are unlikely. The use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 will minimize exposure to these chemicals.

TSCA Inventory All of the components of this product are listed on the TSCA inventory.
Canadian WHIMS Class B, Division 2; Class D, Division 2, Subdivision B; Class D,
Classification: Division 2, Subdivision A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Section 16 OTHER INFORMATION

NFPA and HMIS:

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None

HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, we cannot give any guarantees regarding information from other sources, and expressly do not make warranties, nor assume any liability for its use.

Template: tmpl-cn-e1

Oatey

No. 31843

CLEAR **LO-V.O.C. REGULAR**
PVC CEMENT

WITH REDUCED SOLVENT EMISSIONS
CEMENTO DE PVC COMÚN • TRANSPARENTE
CON DISOLVENTE REDUCIDO Y COMPUESTOS
ORGÁNICOS VOLÁTILES

DANGER:/PELIGRO:

EXTREMELY FLAMMABLE • HARMFUL OR FATAL IF
INHALED • VAPOR HARMFUL • MAY IRRITATE EYES AND SKIN
• MAY BE ABSORBED THROUGH SKIN • VAPORS MAY CAUSE FLASH FIRES

EXTREMAMENTE INFLAMMABLE • NOCIVO O FATAL SI SE INHALA
• VAPORES NOCIVOS • PUEDE IRRITAR LOS OJOS Y LA PIEL • PUEDE SER
ABSORBIDO A TRAVÉS DE LA PIEL • LOS VAPORES PUEDEN CAUSAR INCENDIOS

MADE IN
USA

32 fl. oz. (1 Qt.)
946 ml

NEEDLE
WITH AETM DISC

SECTION C

MATERIAL SAFETY DATA SHEET

SECTION C

#2

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

Trade Name: OATEY PVC REGULAR CLEAR CEMENT
 Product Use: Cement for PVC Plastic Pipe
 Formula: PVC Resin in Solvent Solution
 Synonyms: PVC Plastic Pipe Cement
 Firm Name & Mailing Address: OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. <http://www.oatey.com>
 Oatey Phone Number: (216) 267-7100 or (800) 321-9532
 Emergency Phone Numbers: For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
 Prepared By: Corporate Director - Safety and Environmental Compliance
 Preparation Date: May 20, 2005

SECTION 2

COMPOSITION/INFORMATION ON INGREDIENTS

| INGREDIENTS: | %wt/wt: | CAS NUMBER: | ACGIH TLV TWA: | OSHA PEL TWA: | OTHER: |
|------------------------------|----------|-------------|------------------------------|---------------|--------------|
| Methyl Ethyl Ketone | 10 - 60% | 78-93-3 | 200 ppm 300 ppm STEL | 200 ppm | None |
| Tetrahydrofuran | 20 - 50% | 109-99-9 | 50 ppm(skin) 100 ppm STEL | 200 ppm | 25 ppm (Mfg) |
| Acetone | 0 - 20% | 67-64-1 | 500 ppm 750 ppm STEL | 1000 ppm | None |
| PVC Resin (Non-hazardous) | 10 - 18% | 9002-86-2 | 10 mg/m3 | 15 mg/m3 | None |
| Cyclohexanone | 2 - 15% | 108-94-1 | 20 ppm(skin) 50 ppm STEL | 50 ppm | None |

OSHA Hazard Classification: Flammable, irritant, organ effects

SECTION 3

HAZARDS IDENTIFICATION

Emergency Overview:

Clear liquid with an ether-like odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting, diarrhea and kidney or liver disorders. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.

SECTION 4

FIRST AID MEASURES

CALL 1-303-623-5716 COLLECT

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber's Hand Cleaner or baby oil.

Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

SECTION C

#2

SECTION 5

FIRE FIGHTING MEASURES

Flashpoint / Method: 0 - 5 Degrees F. (-18 - -15 Degrees C) / PMCC
Flammability: LEL = 1.8 % Volume, UEL = 11.8 % Volume
Extinguishing: Use dry chemical, CO2, or foam to extinguish fire. ~~Cool fire~~
Media: exposed container with water. Water may be ineffective as an extinguishing agent.
Special Fire Fighting Procedure: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored
Unusual Fire and Explosion Hazards: Extremely flammable liquid. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.
Hazardous Decomposition Products: Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

SECTION 6

ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Remove all sources of ignition and ventilate area. Stop leak if it can be done without risk. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with an inert absorbent such as sand, earth or other non-combusting material. Put absorbent material in covered, labeled metal containers. Prevent liquid from entering watercourses, sewers and natural waterways. Report releases to authorities as required. See Section 13 for disposal information.

SECTION 7

HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use.
Storage: Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.
Other: "Empty" containers retain product residue and can be hazardous. Follow all MSDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

SECTION 8

EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.
Respiratory Protection: For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.
Skin Protection: Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

SECTION 8 (Continued)

Eye Safety glasses with side shields or safety goggles.
Protection:
Other: Eye wash and safety shower should be available.

SECTION C

#2

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 151 Degrees F / 66 Degrees C
Melting Point: Not applicable
Vapor Pressure: 145 mmHg @ 20 Degrees C
Vapor Density: (Air = 1) 2.5
Volatile Components: 86-90%
Solubility In Water: Negligible
pH: Not applicable
Specific Gravity: 0.89 +/- 0.015 @ 20 Degrees C
Evaporation Rate: (BUAC = 1) = 5.5 - 8.0
Appearance: Clear Liquid
Odor: Ether-Like
Will Dissolve In: Tetrahydrofuran
Material Is: Liquid

SECTION 10 STABILITY AND REACTIVITY

Stability: Stable.
Conditions To Avoid: Avoid heat, sparks, flames and other sources of ignition.
Hazardous Combustion will produce toxic and irritating vapors
Decomposition including carbon monoxide, carbon dioxide and hydrogen
Products: chloride.
Incompatibility/ Oxidizing agents, alkalis, amines, ammonia, acids, chlorine
Materials To Avoid: compounds, chlorinated inorganics (potassium, calcium and
sodium hypochlorite) and hydrogen peroxides. May attack
plastic, resins and rubber.
Hazardous Will not occur.
Polymerization:

SECTION 11 TOXICOLOGICAL INFORMATION

Inhalation: Vapors or mists may cause mucous membrane and respiratory
irritation, coughing, headache, dizziness, dullness, nausea,
shortness of breath and vomiting. High concentrations may cause
central nervous system depression, narcosis and unconsciousness.
May cause kidney, liver and lung damage.
Skin: May cause irritation with redness, itching and pain. Methyl
ethyl ketone and cyclohexanone may be absorbed through the skin
causing effects similar to those listed under inhalation.
Eye: Vapors may cause irritation. Direct contact may cause irritation
with redness, stinging and tearing of the eyes. May cause eye
damage.
Ingestion: Swallowing may cause abdominal pain, nausea, vomiting and
diarrhea. Aspiration during swallowing or vomiting can cause
chemical pneumonia and lung damage. May cause kidney and liver
damage.
Chronic Prolonged or repeated overexposure cause dermatitis and damage
Toxicity: to the kidney, liver, lungs and central nervous system.
Toxicity Data: Acetone: Oral rat LD50: 5,800 mg/kg
Inhalation rat LC50: 50,100 mg/m3/8 hours
Cyclohexanone: Oral rat LD50: 1,620 mg/kg
Inhalation rat LC50: 8,000 ppm/4 hours
Skin rabbit LD50: 1 mL/kg
Tetrahydrofuran: Oral rat LD50: 1,650 mg/kg
Inhalation rat LC50: 21,000 ppm/3 hours

SECTION 11 (Continued)

Methyl Ethyl Ketone: Oral rat LD50: 2,737 mg/kg
Inhalation rat LC50: 23,500 mg/m³/4 hour
Skin rabbit LD50: 6,480 mg/kg

SECTION C

#2

Sensitization: None of the components are known to cause sensitization.

Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA. The National Toxicology Program has reported that exposure of mice and rats to tetrahydrofuran (THF) vapor levels up to 1800 ppm 6 hr/day, 5 days/week for their lifetime caused an increased incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health is unclear at this time, and may be related to "species specific" effects. Elevated incidences of tumors in humans have not been reported for THF. ACGIH has classified cyclohexanone (CYH) and tetrahydrofuran as "A3," Confirmed Animal Carcinogens with Unknown Relevance to Humans.

Mutagenicity: Cyclohexanone has been positive in bacterial and mammalian assays. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.

Reproductive Toxicity: Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran have been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

Medical Conditions Aggravated By Exposure: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

SECTION 12

ECOLOGICAL INFORMATION

This product is not expected to be toxic to aquatic organisms.

Cyclohexanone: 96 hour LC50 values for fish is over 100 mg/l.

Tetrahydrofuran: 96 hour LC50 fathead minnow: 2160 mg/L.

Methyl Ethyl Ketone: 96 hour LC50 for fish is greater than 100 mg/L.

Acetone: 96 hour LC50 for fish is greater than 100 mg/L.

VOC

Information: This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.

VOC Level: 550 g/l per SCAQMD Test Method 316A.

SECTION 13

DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.

RCRA Hazardous Waste Number: U002, U057, U159, U213

EPA Hazardous Waste ID Number: D001, D035, F003, F005

EPA Hazard Waste Class: Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content)

SECTION C #2

SECTION 14 TRANSPORT INFORMATION

DOT Less than 1 Liter (0.3 gal) Greater than 1 Liter (0.3 gal)
Proper Shipping Name: Consumer Commodity Adhesives
Hazard Class/Packing Group: ORM-D 3, PGII
UN/NA Number: None UN1133
Hazard Labels: None Flammable Liquid

IMDG

Proper Shipping Name: Adhesives Adhesives
Hazard Class/Packing Group: 3, II 3, II
UN Number: UN1133 UN1133
Label: None (Limited Quantities are excepted from labeling) Class 3 (Flammable Liquid)

2004 North American Emergency Response Guidebook Number: 127 or 128

SECTION 15 REGULATORY INFORMATION

Hazard Category for Section 311/312: Acute Health, Chronic Health, Flammable

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

| Chemical | CAS # | % by wt. |
|---------------------|---------|----------|
| Methyl Ethyl Ketone | 78-93-3 | 10-60% |

CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Tetrahydrofuran (50% maximum) of 1,000 lbs, is 2,000 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product contains trace amounts of chemicals known to the State of to cause cancer. Under normal Use conditions, exposure to these chemicals at levels above the State of California "No Significant Risk Level" (NSRL) are unlikely. Oatey strongly encourages the use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 to minimize exposure to these chemicals.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

Canadian WHIMS Classification: Class B, Division 2; Class D, Division 2, Subdivision B; Class D, Division 2, Subdivision A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16 OTHER INFORMATION

NFPA and HMIS:

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None

HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.



Oatey

#30758

FOR CPVC, PVC

PURPLE PRIMER

IMPRIMER PURPLE

SECTION C

AVVERTENZE PERILLOSO: ESTREMAMENTE INFIAMMABILE.

• I VAPORI POSSONO CAUSARE IRRITAZIONE E INFIAMMAZIONE DEGLI OCCHI.

• I VAPORI POSSONO CAUSARE IRRITAZIONE E INFIAMMAZIONE DEL TRACCEO.

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• I VAPORI POSSONO CAUSARE IRRITAZIONE E INFIAMMAZIONE DEL TRACCEO.



32 fl. oz. 946 ml



MATERIAL SAFETY DATA SHEET

SECTION C

#3

MSDS Number: 1402C

Section 1

PRODUCT AND COMPANY IDENTIFICATION

Trade Name: OATEY CANADIAN PURPLE or CLEAR PRIMER NSF LISTED
Product Nos.: Purple - 30759, 30927, 31480, 31481, 31482, 31483 Clear - 30754, 31485, 31486, 31487, 31488, 31525, 31526, 31527, 31528
Product Use: Primer for PVC and CPVC Plastic Pipe
Formula: See section 3
Synonyms: Plastic Pipe Primer
Firm Name & Address: Oatey Company 4700 West 160th Street, Cleveland, Ohio 44135
www.oatey.com
Firm Phone No: (216) 267-7100
Emergency Phone Nos.: For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
Prepared by: Technical Department
Preparation Date: 09/11/2012

Section 2

HAZARDS IDENTIFICATION

Emergency Overview:

Purple or Clear liquid with an ether-like odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting, diarrhea and kidney or liver disorders. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.

Section 3

COMPOSITION/INFORMATION ON INGREDIENTS

| INGREDIENTS: | %wt/wt : | CAS NUMBER: | ACGIH TLV TWA: | OSHA PEL TWA | OTHER: |
|---------------------|----------|-------------|------------------------------|--------------|--------------|
| Tetrahydrofuran | 10 - 30% | 109-99-9 | 50 ppm(skin) 100 ppm STEL | 200 ppm | 25 ppm (Mfg) |
| Methyl Ethyl Ketone | 20 - 40% | 78-93-3 | 200 ppm 300 ppm | 200 ppm | None |
| Acetone | 20 - 40% | 67-64-1 | 500 ppm 750 ppm STEL | 1000 ppm | None |
| Cyclohexanone | 15 - 30% | 108-94-1 | 20 ppm(skin) 50 ppm STEL | 50 ppm | None |

OSHA Hazard Classification: Flammable, irritant, organ effects

Section 4

FIRST AID MEASURES

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber's Hand Cleaner or baby oil.
Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.
Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.
Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by

calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

Section 5

FIRE FIGHTING MEASURES

Flashpoint / 14 - 23 Degrees F. (-10 to -5 Degrees C) / CCCFP
Method:
Flammability: LEL = 1.8 % Volume, UEL = 11.8 % Volume
Extinguishing: Use dry chemical, CO2, or foam to extinguish fire. Cool fire with water. Water may be ineffective as an extinguishing agent.
Media:
Special Fire Fighting Procedure: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored
Unusual Fire And Explosion Hazards: Extremely flammable liquid. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.
Hazardous Decomposition Products: Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

SECTION C

#3

Section 6

ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Remove all sources of ignition and ventilate area. Stop leak if it can be done without risk. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with an inert absorbent such as sand, earth or other non-combusting material. Put absorbent material in covered, labeled metal containers. Prevent liquid from entering watercourses, sewers and natural waterways. Report releases to authorities as required. See Section 13 for disposal information.

Section 7

HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use.
Storage: Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.
Other: "Empty" containers retain product residue and can be hazardous. Follow all MSDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

Section 8

EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.
Respiratory Protection: For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.
Skin Protection: Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.
Eye Protection: Safety glasses with side shields or safety goggles.

Section 9**PHYSICAL AND CHEMICAL PROPERTIES**

Boiling Point: 151 Degrees F / 66 Degrees C
Melting Point: Not applicable
Vapor Pressure: 145 mmHg @ 20 Degrees C
Vapor Density: (Air = 1) 2.5
Volatile Components: 99.96%
Solubility In Water: Negligible
pH: Not applicable
Specific Gravity: 0.84 +/- 0.02 @ 20 Degrees C
Evaporation Rate: (BUAC = 1) = 5.5 - 8.0
Appearance: Purple or Clear Liquid
Odor: Ether-Like
Will Dissolve In: Tetrahydrofuran
Material Is: Liquid

SECTION C**#3****Section 10****STABILITY AND REACTIVITY**

Stability: Stable.
Conditions To Avoid: Avoid heat, sparks, flames and other sources of ignition.
Hazardous Decomposition: Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.
Products: Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.
Incompatibility/ Materials To Avoid: Will not occur.
Hazardous Polymerization:

Section 11**TOXICOLOGICAL INFORMATION**

Inhalation: Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.
Skin: May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.
Eye: Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.
Ingestion: Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.
Chronic Toxicity: Prolonged or repeated overexposure cause dermatitis and damage to the kidney, liver, lungs and central nervous system.
Toxicity Data: Acetone: Oral rat LD50: 5,800 mg/kg
Inhalation rat LC50: 50,100 mg/m3/8 hours
Cyclohexanone: Oral rat LD50: 1,620 mg/kg
Inhalation rat LC50: 8,000 ppm/4 hours
Skin rabbit LD50: 1 mL/kg
Tetrahydrofuran: Oral rat LD50: 1,650 mg/kg
Inhalation rat LC50: 21,000 ppm/3 hours
Methyl Ethyl Ketone: Oral rat LD50: 2,737 mg/kg
Inhalation rat LC50: 23,500 mg/m3/8 hours
Skin rabbit LD50: 6,480 mg/kg
Sensitization: None of the components are known to cause sensitization.
Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA. The National Toxicology Program has reported that exposure of mice and rats to tetrahydrofuran (THF) vapor levels up to 1800 ppm 6 hr/day, 5 days/week for their lifetime caused an increased incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health is unclear at this time, and

may be related to "species specific" effects. Elevated incidences of tumors in humans have not been reported for THF. ACGIH has classified cyclohexanone (CYH) and tetrahydrofuran as "A3," Confirmed Animal Carcinogens with Unknown Relevance to Humans.

Mutagenicity: Cyclohexanone has been positive in bacterial and mammalian assays. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.

Reproductive Toxicity: Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

Medical Conditions Aggravated By Exposure: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

SECTION C #3

Section 12 ECOLOGICAL INFORMATION

This product is not expected to be toxic to aquatic organisms.

Cyclohexanone: 96 hour LC50 values for fish is over 100 mg/l.

Tetrahydrofuran: 96 hour LC50 fathead minnow: 2160 mg/L.

Acetone: 96 hour LC50 for fish is greater than 100 mg/L.

Methyl Ethyl Ketone: 96 hour LC50 for fish is greater than 100 mg/L.

VOC Information: This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.

VOC Level: Maximum 550 g/L per SCAQMD Test Method 316A.

Section 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.

RCRA Hazardous Waste Number: U002, U057, U159, U213

EPA Hazardous Waste ID Number: D001, D035, F003, F0005

EPA Hazard Waste Number: Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content)

Section 14 TRANSPORT INFORMATION

| | <u>Less than 1 Liter (0.3 gal)</u> | <u>Greater than 1 Liter (0.3 gal)</u> |
|-----------------------|--|--|
| DOT | None | UN1993 |
| UN/NA Number: | None | UN1993 |
| Proper Shipping Name: | Consumer Commodity | Flammable Liquid, NOS (Methyl Ethyl Ketone, Acetone) |
| Hazard Class: | ORM-D | 3 |
| Packing Group: | None | PGII |
| Hazard Labels: | None | Flammable Liquid |
| IMDG | | |
| UN Number: | UN1993 | UN1993 |
| Proper Shipping Name: | Flammable Liquid, NOS (Limited Quantity) | Flammable Liquid, NOS (Methyl Ethyl Ketone, Acetone) |
| Hazard Class: | 3 | 3 |
| Packing Group: | II | II |
| Label: | None (Limited Quantities are expected from labeling) | Class 3 (Flammable Liquid) |
| Flashpoint (deg C) | -10 to -5 Degrees C | -10 to -5 Degrees C |

Section 15 REGULATORY INFORMATION

Hazard Category for Acute Health, Chronic Health, Flammable
Section 311/312:

Section 302 This product does not contain chemicals regulated under SARA Section 302.
Extremely Hazardous
Substances (TPQ):

Section 313 Toxic Chemicals: This product does not contain chemicals subject to SARA Section 313 Reporting requirements.
CERCLA 103 Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Tetrahydrofuran (30% maximum) of 1,000 lbs, is 3,333 lbs.
Reportable Quantity: Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product does not contain any chemicals subject to California Proposition 65 regulations.

TSCA Inventory All of the components of this product are listed on the TSCA inventory.
Canadian WHIMS Class B, Division 2; Class D, Division 2, Subdivision B; Class D,
Classification: Division 2, Subdivision A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Section 16 OTHER INFORMATION

NFPA and HMIS:

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None

HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, we cannot give any guarantees regarding information from other sources, and expressly do not make warranties, nor assume any liability for its use.

Template: tmpl-cn-e1

SECTION C

#3



SECTION C



SECTION C

Material Name: OATEY CPVC FLOWGUARD GOLD ONE-STEP YELLOW CEMENT

#4

*** Section 1 - Product and Company Identification ***

MSDS #1203E

Part Numbers: 31910(TV), 31911(TV), 31912, 31913, 31914, 31656, 31657, 32200, 32201, 32202, 32203, 31660, 31661, 31662, 31663 UVI - 31917, 31918, 31919

Manufacturer Information

Oatey Co.
4700 West 160th Street
Cleveland, OH 44135

Phone: 216-267-7100

For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1- 703-527-3887.

*** Section 2 - Hazards Identification ***

GHS Classification:

Flammable Liquids - Category 2
Acute Toxicity Oral - Category 4
Acute Toxicity Dermal - Category 4
Acute Toxicity Inhalation - Category 4
Eye Damage/Irritation - Category 2A
Carcinogenicity - Category 2
Specific Target Organ Toxicity Single Exposure - Category 3

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

Danger

Hazard Statements

Highly flammable liquid and vapor.
Harmful if swallowed.
Harmful in contact with skin.
Harmful if inhaled.
Causes serious eye irritation.
Contains a chemical classified by the US EPA as a suspected possible carcinogen.
May cause respiratory irritation.
May cause drowsiness or dizziness.

Material Name: OATEY CPVC FLOWGUARD GOLD ONE-STEP YELLOW CEMENT

Precautionary Statements

Prevention

Keep away from heat/sparks/open flames and hot surfaces. - No smoking.
Keep container tightly closed.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/eye protection/face protection.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing fume/gas/mist/vapors.
Use only outdoors or in a well-ventilated area.

Response

If on skin (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
If swallowed: Call a poison center or doctor/physician if you feel unwell. Rinse mouth. Do not induce vomiting.
If inhaled: 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.
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.
If exposed or concerned: Get medical advice/attention.
In case of fire: Use dry chemical, CO₂, or foam to extinguish fire.

Storage

Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

*** * * Section 3 - Composition / Information on Ingredients * * ***

| CAS # | Component | Percent |
|--------------|--|----------------|
| 109-99-9 | Tetrahydrofuran | 30-60 |
| 78-93-3 | Methyl ethyl ketone | 10-30 |
| 68648-82-8 | Ethene, chloro-, homopolymer, chlorinated | 10-20 |
| 67-64-1 | Acetone | 5-15 |
| 108-94-1 | Cyclohexanone | 5-15 |
| 112945-52-5 | Silica, amorphous, fumed, crystalline-free | 1-5 |

*** * * Section 4 - First Aid Measures * * ***

First Aid: Eyes

If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

SECTION C

#4

Material Name: OATEY CPVC FLOWGUARD GOLD ONE-STEP YELLOW CEMENT

First Aid: Skin

Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with hand cleaner or baby oil.

First Aid: Ingestion

DO NOT INDUCE VOMITING. Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

First Aid: Inhalation

If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

*** * * Section 5 - Fire Fighting Measures * * ***

General Fire Hazards

See Section 9 for Flammability Properties.

Highly flammable liquid and vapor. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

Hazardous Combustion Products

Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

Extinguishing Media

Use dry chemical, CO₂, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.

Unsuitable Extinguishing Media

None.

Fire Fighting Equipment/Instructions

Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

*** * * Section 6 - Accidental Release Measures * * ***

Recovery and Neutralization

Stop leak if it can be done without risk.

Materials and Methods for Clean-Up

Remove all sources of ignition and ventilate area. Soak up spill with an inert absorbent such as sand, earth or other noncombusting material. Put absorbent material in covered, labeled metal containers.

Emergency Measures

Isolate area. Keep unnecessary personnel away.

Personal Precautions and Protective Equipment

Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high.

Environmental Precautions

Prevent liquid from entering watercourses, sewers and natural waterways.

Prevention of Secondary Hazards

None

***** Section 7 - Handling and Storage *****

Handling Procedures

Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use. "Empty" containers retain product residue and can be hazardous. Follow all SDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

Storage Procedures

Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.

Incompatibilities

Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

***** Section 8 - Exposure Controls / Personal Protection *****

Component Exposure Limits

Tetrahydrofuran (109-99-9)

ACGIH: 50 ppm TWA
100 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 200 ppm TWA; 590 mg/m3 TWA
NIOSH: 200 ppm TWA; 590 mg/m3 TWA
250 ppm STEL; 735 mg/m3 STEL

Methyl ethyl ketone (78-93-3)

ACGIH: 200 ppm TWA
300 ppm STEL
OSHA: 200 ppm TWA; 590 mg/m3 TWA
NIOSH: 200 ppm TWA; 590 mg/m3 TWA
300 ppm STEL; 885 mg/m3 STEL

Acetone (67-64-1)

ACGIH: 500 ppm TWA
750 ppm STEL
OSHA: 1000 ppm TWA; 2400 mg/m3 TWA
NIOSH: 250 ppm TWA; 590 mg/m3 TWA

Cyclohexanone (108-94-1)

ACGIH: 20 ppm TWA
50 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 50 ppm TWA; 200 mg/m3 TWA
NIOSH: 25 ppm TWA; 100 mg/m3 TWA
Potential for dermal absorption

SECTION C
#4

Material Name: OATEY CPVC FLOWGUARD GOLD ONE-STEP YELLOW CEMENT

Engineering Measures

Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.

Personal Protective Equipment: Respiratory

For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Personal Protective Equipment: Hands

Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

Personal Protective Equipment: Eyes

Safety glasses with side shields or safety goggles.

Personal Protective Equipment: Skin and Body

No additional protective equipment needed.

*** Section 9 - Physical & Chemical Properties ***

| | | | |
|--|------------------------|--|-----------------------|
| Appearance: | Yellow/Gold or Orange | Odor: | Ether-like |
| Physical State: | Liquid | pH: | NA |
| Vapor Pressure: | 145 mmHg @ 20°C | Vapor Density: | 2.5 |
| Boiling Point: | 151°F (66°C) | Melting Point: | NA |
| Solubility (H2O): | Negligible | Specific Gravity: | 0.94 +/- 0.02 @ 20°C |
| Evaporation Rate: | (BUAC = 1) = 5.5 - 8.0 | VOC: | 80-84% |
| Octanol/H2O Coeff.: | ND | Flash Point: | 14-23°F (-10 to -5°C) |
| Flash Point Method: | CCCFP | Upper Flammability Limit (UFL): | 11.8 |
| Lower Flammability Limit (LFL): | 1.8 | Burning Rate: | ND |
| Auto Ignition: | ND | | |

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Avoid heat, sparks, flames and other sources of ignition.

Incompatible Products

Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

Hazardous Decomposition Products

Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

* * * **Section 11 - Toxicological Information** * * *

Acute Toxicity

SECTION C

#4

Component Analysis - LD50/LC50

Tetrahydrofuran (109-99-9)

Inhalation LC50 Rat 53.9 mg/L 4 h; Inhalation LC50 Rat 180 mg/L 1 h; Oral LD50 Rat 1650 mg/kg

Methyl ethyl ketone (78-93-3)

Inhalation LC50 Mouse 32 g/m³ 4 h; Oral LD50 Rat 2737 mg/kg; Dermal LD50 Rabbit 6480 mg/kg

Acetone (67-64-1)

Oral LD50 Rat 5800 mg/kg

Cyclohexanone (108-94-1)

Inhalation LC50 Rat 10.7 mg/L 4 h; Inhalation LC50 Rat 8000 ppm 4 h; Oral LD50 Rat 800 mg/kg; Dermal LD50 Rabbit 948 mg/kg

Silica, amorphous, fumed, crystalline-free (112945-52-5)

Oral LD50 Rat 3160 mg/kg

Potential Health Effects: Skin Corrosion Property/Stimulativeness

May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.

Potential Health Effects: Ingestion

Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

Potential Health Effects: Inhalation

Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

Cyclohexanone has been positive in bacterial and mammalian assays. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.

Material Name: OATEY CPVC FLOWGUARD GOLD ONE-STEP YELLOW CEMENT

Carcinogenicity

A: General Product Information

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.

B: Component Carcinogenicity

Tetrahydrofuran (109-99-9)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

Acetone (67-64-1)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

Cyclohexanone (108-94-1)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

Silica, amorphous, fumed, crystalline-free (112945-52-5)

IARC: Monograph 68 [1997] (listed under Amorphous silica) (Group 3 (not classifiable))

Reproductive Toxicity

Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

Specified Target Organ General Toxicity: Single Exposure

May cause respiratory irritation. Inhalation of high concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ toxicity repeat exposure effects.

Aspiration Respiratory Organs Hazard

Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

This product is not expected to be toxic to aquatic organisms.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Tetrahydrofuran (109-99-9)

Test & Species

Conditions

| | |
|--------------------------------|----------------------------------|
| 96 Hr LC50 Pimephales promelas | 1970-2360 mg/L [flow-through] |
| 96 Hr LC50 Pimephales promelas | 2700-3600 mg/L [static] |
| 24 Hr EC50 Daphnia magna | 5930 mg/L |

Material Name: OATEY CPVC FLOWGUARD GOLD ONE-STEP YELLOW CEMENT

SECTION C
#4

Methyl ethyl ketone (78-93-3)

Test & Species

| | |
|--------------------------------|----------------------------------|
| 96 Hr LC50 Pimephales promelas | 3130-3320 mg/L [flow-through] |
| 48 Hr EC50 Daphnia magna | >520 mg/L |
| 48 Hr EC50 Daphnia magna | 5091 mg/L |
| 48 Hr EC50 Daphnia magna | 4025 - 6440 mg/L [Static] |

Conditions

Acetone (67-64-1)

Test & Species

| | |
|--------------------------------|--------------------------------|
| 96 Hr LC50 Oncorhynchus mykiss | 4.74 - 6.33 mL/L |
| 96 Hr LC50 Pimephales promelas | 6210 - 8120 mg/L [static] |
| 96 Hr LC50 Lepomis macrochirus | 8300 mg/L |
| 48 Hr EC50 Daphnia magna | 10294 - 17704 mg/L [Static] |
| 48 Hr EC50 Daphnia magna | 12600 - 12700 mg/L |

Conditions

Cyclohexanone (108-94-1)

Test & Species

| | |
|--------------------------------|-----------------------------|
| 96 Hr LC50 Pimephales promelas | 481-578 mg/L [flow-through] |
| 96 Hr LC50 Pimephales promelas | 8.9 mg/L |
| 96 Hr EC50 Chlorella vulgaris | 20 mg/L |
| 24 Hr EC50 Daphnia magna | 800 mg/L |

Conditions

Persistence/Degradability

No information available for the product.

Bioaccumulation

No information available for the product.

Mobility in Soil

No information available for the product.

*** * * Section 13 - Disposal Considerations * * ***

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

*** * * Section 14 - Transportation Information * * ***

DOT Information

For Greater than 1 liter (0.3 gal):

Shipping Name: Adhesives

UN #: 1133 Hazard Class: 3 Packing Group: II

Required Label(s): Flammable Liquid

For Less than 1 liter (0.3 gal):

Material Name: OATEY CPVC FLOWGUARD GOLD ONE-STEP YELLOW CEMENT

Shipping Name: Consumer Commodity, ORM-D

IMDG Information

For Greater than 1 liter (0.3 gal):

Shipping Name: Adhesives

UN #: 1133 Hazard Class: 3 Packing Group: II

Required Label(s): Flammable Liquid

For Less than 1 liter (0.3 gal):

Shipping Name: Adhesives

UN #: 1133 Hazard Class: 3 Packing Group: II

Required Label(s): None (Limited Quantities are expected from labeling)

SECTION C

#4

* * * Section 15 - Regulatory Information * * *

Regulatory Information

US Federal Regulations

Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Tetrahydrofuran (109-99-9)

CERCLA: 1000 lb final RQ; 454 kg final RQ

Methyl ethyl ketone (78-93-3)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

Acetone (67-64-1)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

Cyclohexanone (108-94-1)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

State Regulations

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

| Component | CAS | CA | MA | MN | NJ | PA | RI |
|---------------------|----------|-----|-----|-----|-----|-----|----|
| Tetrahydrofuran | 109-99-9 | Yes | Yes | Yes | Yes | Yes | No |
| Methyl ethyl ketone | 78-93-3 | Yes | Yes | Yes | Yes | Yes | No |
| Acetone | 67-64-1 | Yes | Yes | Yes | Yes | Yes | No |
| Cyclohexanone | 108-94-1 | Yes | Yes | Yes | Yes | Yes | No |

Material Name: OATEY CPVC FLOWGUARD GOLD ONE-STEP YELLOW CEMENT

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

| Component | CAS # | Minimum Concentration |
|---------------------|----------|-----------------------|
| Tetrahydrofuran | 109-99-9 | 1 % |
| Methyl ethyl ketone | 78-93-3 | 1 % |
| Acetone | 67-64-1 | 1 % |
| Cyclohexanone | 108-94-1 | 0.1 % |

SECTION C

#4

Additional Regulatory Information

A: General Product Information

This product contains trace amounts of chemicals known to the State of California to cause cancer. Under normal use conditions, exposure to these chemicals at levels above the State of California "No Significant Risk Level" (NSRL) are unlikely. The use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 will minimize exposure to these chemicals.

B: Component Analysis - Inventory

| Component | CAS # | TSCA | CAN | EEC |
|--|-------------|------|-----|--------|
| Tetrahydrofuran | 109-99-9 | Yes | DSL | EINECS |
| Methyl ethyl ketone | 78-93-3 | Yes | DSL | EINECS |
| Ethene, chloro-, homopolymer, chlorinated | 68648-82-8 | Yes | DSL | No |
| Acetone | 67-64-1 | Yes | DSL | EINECS |
| Cyclohexanone | 108-94-1 | Yes | DSL | EINECS |
| Silica, amorphous, fumed, crystalline-free | 112945-52-5 | No | DSL | No |

* * * Section 16 - Other Information * * *

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

Literature References

None

Other Information

NFPA and HMIS:

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None

HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, we cannot give any guarantees regarding information from other sources, and expressly do not make warranties, nor assume any liability for its use.

End of Sheet



SECTION C



SECTION C #5

Material Name: OATEY CPVC HEAVY DUTY GRAY OR ORANGE CEMENT

*** Section 1 - Product and Company Identification ***

MSDS #1202E

Part Numbers: Gray - 31036, 31037 Orange - 31083, 31084

Manufacturer Information

Oatey Co.
4700 West 160th Street
Cleveland, OH 44135

Phone: 216-267-7100

For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1- 703-527-3887.

*** Section 2 - Hazards Identification ***

GHS Classification:

Flammable Liquids - Category 2
Acute Toxicity Oral - Category 4
Acute Toxicity Dermal - Category 4
Acute Toxicity Inhalation - Category 4
Eye Damage/Irritation - Category 2A
Carcinogenicity - Category 2
Specific Target Organ Toxicity Single Exposure - Category 3

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

Danger

Hazard Statements

Highly flammable liquid and vapor.
Harmful if swallowed.
Harmful in contact with skin.
Harmful if inhaled.
Causes serious eye irritation.
Contains a chemical classified by the US EPA as a suspected possible carcinogen.
May cause respiratory irritation.
May cause drowsiness or dizziness.

Precautionary Statements

Prevention

Keep away from heat/sparks/open flames and hot surfaces. - No smoking.

Material Name: OATEY CPVC HEAVY DUTY GRAY OR ORANGE CEMENT

Keep container tightly closed.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/eye protection/face protection.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing fume/gas/mist/vapors.
Use only outdoors or in a well-ventilated area.

SECTION C
#5**Response**

If on skin (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
If swallowed: Call a poison center or doctor/physician if you feel unwell. Rinse mouth. Do not induce vomiting.
If inhaled: 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.
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.
If exposed or concerned: Get medical advice/attention.
In case of fire: Use dry chemical, CO₂, or foam to extinguish fire.

Storage

Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

*** * * Section 3 - Composition / Information on Ingredients * * ***

| CAS # | Component | Percent |
|-------------|--|---------|
| 109-99-9 | Tetrahydrofuran | 50-70 |
| 68648-82-8 | Ethene, chloro-, homopolymer, chlorinated | 10-20 |
| 108-94-1 | Cyclohexanone | 5-15 |
| 67-64-1 | Acetone | 5-15 |
| 112945-52-5 | Silica, amorphous, fumed, crystalline-free | 1-5 |

*** * * Section 4 - First Aid Measures * * *****First Aid: Eyes**

If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

First Aid: Skin

Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with hand cleaner or baby oil.

Material Name: OATEY CPVC HEAVY DUTY GRAY OR ORANGE CEMENT

First Aid: Ingestion

DO NOT INDUCE VOMITING. Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

First Aid: Inhalation

If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

*** * * Section 5 - Fire Fighting Measures * * ***

General Fire Hazards

See Section 9 for Flammability Properties.

Highly flammable liquid and vapor. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

Hazardous Combustion Products

Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

Extinguishing Media

Use dry chemical, CO₂, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.

Unsuitable Extinguishing Media

None.

Fire Fighting Equipment/Instructions

Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

*** * * Section 6 - Accidental Release Measures * * ***

Recovery and Neutralization

Stop leak if it can be done without risk.

Materials and Methods for Clean-Up

Remove all sources of ignition and ventilate area. Soak up spill with an inert absorbent such as sand, earth or other noncombusting material. Put absorbent material in covered, labeled metal containers.

Emergency Measures

Isolate area. Keep unnecessary personnel away.

Personal Precautions and Protective Equipment

Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high.

Environmental Precautions

Prevent liquid from entering watercourses, sewers and natural waterways.

Prevention of Secondary Hazards

None

***** Section 7 - Handling and Storage *****

Handling Procedures

Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use. "Empty" containers retain product residue and can be hazardous. Follow all SDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

Storage Procedures

Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.

Incompatibilities

Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

***** Section 8 - Exposure Controls / Personal Protection *****

Component Exposure Limits

Tetrahydrofuran (109-99-9)

ACGIH: 50 ppm TWA
100 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 200 ppm TWA; 590 mg/m³ TWA
NIOSH: 200 ppm TWA; 590 mg/m³ TWA
250 ppm STEL; 735 mg/m³ STEL

Acetone (67-64-1)

ACGIH: 500 ppm TWA
750 ppm STEL
OSHA: 1000 ppm TWA; 2400 mg/m³ TWA
NIOSH: 250 ppm TWA; 590 mg/m³ TWA

Cyclohexanone (108-94-1)

ACGIH: 20 ppm TWA
50 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 50 ppm TWA; 200 mg/m³ TWA
NIOSH: 25 ppm TWA; 100 mg/m³ TWA
Potential for dermal absorption

Engineering Measures

Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.

Personal Protective Equipment: Respiratory

For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Material Name: OATEY CPVC HEAVY DUTY GRAY OR ORANGE CEMENT

Personal Protective Equipment: Hands

Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

Personal Protective Equipment: Eyes

Safety glasses with side shields or safety goggles.

Personal Protective Equipment: Skin and Body

No additional protective equipment needed.

SECTION C

#5

*** * * Section 9 - Physical & Chemical Properties * * ***

| | | | |
|--|------------------------|--|-----------------------|
| Appearance: | Gray or orange | Odor: | Ether-like |
| Physical State: | Liquid | pH: | NA |
| Vapor Pressure: | 145 mmHg @ 20°C | Vapor Density: | 2.5 |
| Boiling Point: | 151°F (66°C) | Melting Point: | NA |
| Solubility (H2O): | Negligible | Specific Gravity: | 0.97 +/- 0.02 @ 20°C |
| Evaporation Rate: | (BUAC = 1) = 5.5 - 8.0 | VOC: | 78-82% |
| Octanol/H2O Coeff.: | ND | Flash Point: | 14-23°F (-10 to -5°C) |
| Flash Point Method: | CCCFP | Upper Flammability Limit (UFL): | 11.8 |
| Lower Flammability Limit (LFL): | 1.8 | Burning Rate: | ND |
| Auto Ignition: | ND | | |

*** * * Section 10 - Chemical Stability & Reactivity Information * * ***

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Avoid heat, sparks, flames and other sources of ignition.

Incompatible Products

Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

Hazardous Decomposition Products

Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

*** * * Section 11 - Toxicological Information * * ***

Acute Toxicity

Component Analysis - LD50/LC50

Tetrahydrofuran (109-99-9)

Inhalation LC50 Rat 53.9 mg/L 4 h; Inhalation LC50 Rat 180 mg/L 1 h; Oral LD50 Rat 1650 mg/kg

Acetone (67-64-1)

Oral LD50 Rat 5800 mg/kg

Cyclohexanone (108-94-1)

Material Name: OATEY CPVC HEAVY DUTY GRAY OR ORANGE CEMENT

Inhalation LC50 Rat 10.7 mg/L 4 h; Inhalation LC50 Rat 8000 ppm 4 h; Oral LD50 Rat 800 mg/kg; Dermal LD50 Rabbit 948 mg/kg

Silica, amorphous, fumed, crystalline-free (112945-52-5)

Oral LD50 Rat 3160 mg/kg

SECTION C**#5****Potential Health Effects: Skin Corrosion Property/Stimulativeness**

May cause irritation with redness, itching and pain. Cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.

Potential Health Effects: Ingestion

Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

Potential Health Effects: Inhalation

Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

Cyclohexanone has been positive in bacterial and mammalian assays. Acetone and tetrahydrofuran are generally thought not to be mutagenic.

Carcinogenicity**A: General Product Information**

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.

B: Component Carcinogenicity**Tetrahydrofuran (109-99-9)**

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

Acetone (67-64-1)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

Cyclohexanone (108-94-1)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

Silica, amorphous, fumed, crystalline-free (112945-52-5)

IARC: Monograph 68 [1997] (listed under Amorphous silica) (Group 3 (not classifiable))

Material Name: OATEY CPVC HEAVY DUTY GRAY OR ORANGE CEMENT

Reproductive Toxicity

Cyclohexanone has been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran has been found to cause adverse developmental effects only when exposed to levels that cause other toxic effects to the mother.

Specified Target Organ General Toxicity: Single Exposure

May cause respiratory irritation. Inhalation of high concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ toxicity repeat exposure effects.

Aspiration Respiratory Organs Hazard

Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

This product is not expected to be toxic to aquatic organisms.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Tetrahydrofuran (109-99-9)

Test & Species

Conditions

| | |
|--------------------------------|----------------------------------|
| 96 Hr LC50 Pimephales promelas | 1970-2360 mg/L [flow-through] |
| 96 Hr LC50 Pimephales promelas | 2700-3600 mg/L [static] |
| 24 Hr EC50 Daphnia magna | 5930 mg/L |

Acetone (67-64-1)

Test & Species

Conditions

| | |
|--------------------------------|--------------------------------|
| 96 Hr LC50 Oncorhynchus mykiss | 4.74 - 6.33 mL/L |
| 96 Hr LC50 Pimephales promelas | 6210 - 8120 mg/L [static] |
| 96 Hr LC50 Lepomis macrochirus | 8300 mg/L |
| 48 Hr EC50 Daphnia magna | 10294 - 17704 mg/L [Static] |
| 48 Hr EC50 Daphnia magna | 12600 - 12700 mg/L |

Cyclohexanone (108-94-1)

Test & Species

Conditions

| | |
|--------------------------------|-----------------------------|
| 96 Hr LC50 Pimephales promelas | 481-578 mg/L [flow-through] |
| 96 Hr LC50 Pimephales promelas | 8.9 mg/L |
| 96 Hr EC50 Chlorella vulgaris | 20 mg/L |
| 24 Hr EC50 Daphnia magna | 800 mg/L |

Persistence/Degradability

No information available for the product.

Bioaccumulation

No information available for the product.

Material Name: OATEY CPVC HEAVY DUTY GRAY OR ORANGE CEMENT

Mobility in Soil

No information available for the product.

***** Section 13 - Disposal Considerations *****

SECTION C

#5

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

***** Section 14 - Transportation Information *****

DOT Information

For Greater than 1 liter (0.3 gal):

Shipping Name: Adhesives

UN #: 1133 Hazard Class: 3 Packing Group: II

Required Label(s): Flammable Liquid

For Less than 1 liter (0.3 gal):

Shipping Name: Consumer Commodity, ORM-D

IMDG Information

For Greater than 1 liter (0.3 gal):

Shipping Name: Adhesives

UN #: 1133 Hazard Class: 3 Packing Group: II

Required Label(s): Flammable Liquid

For Less than 1 liter (0.3 gal):

Shipping Name: Adhesives

UN #: 1133 Hazard Class: 3 Packing Group: II

Required Label(s): None (Limited Quantities are expected from labeling)

***** Section 15 - Regulatory Information *****

Regulatory Information

US Federal Regulations

Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Tetrahydrofuran (109-99-9)

CERCLA: 1000 lb final RQ; 454 kg final RQ

Acetone (67-64-1)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

Cyclohexanone (108-94-1)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

Material Name: OATEY CPVC HEAVY DUTY GRAY OR ORANGE CEMENT

State Regulations

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

| Component | CAS | CA | MA | MN | NJ | PA | RI |
|-----------------|----------|-----|-----|-----|-----|-----|----|
| Tetrahydrofuran | 109-99-9 | Yes | Yes | Yes | Yes | Yes | No |
| Acetone | 67-64-1 | Yes | Yes | Yes | Yes | Yes | No |
| Cyclohexanone | 108-94-1 | Yes | Yes | Yes | Yes | Yes | No |

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

| Component | CAS # | Minimum Concentration |
|-----------------|----------|-----------------------|
| Tetrahydrofuran | 109-99-9 | 1 % |
| Acetone | 67-64-1 | 1 % |
| Cyclohexanone | 108-94-1 | 0.1 % |

Additional Regulatory Information

A: General Product Information

This product contains trace amounts of chemicals known to the State of California to cause cancer. Under normal use conditions, exposure to these chemicals at levels above the State of California "No Significant Risk Level" (NSRL) are unlikely. The use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 will minimize exposure to these chemicals.

B: Component Analysis - Inventory

| Component | CAS # | TSCA | CAN | EEC |
|--|-------------|------|-----|--------|
| Tetrahydrofuran | 109-99-9 | Yes | DSL | EINECS |
| Ethene, chloro-, homopolymer, chlorinated | 68648-82-8 | Yes | DSL | No |
| Acetone | 67-64-1 | Yes | DSL | EINECS |
| Cyclohexanone | 108-94-1 | Yes | DSL | EINECS |
| Silica, amorphous, fumed, crystalline-free | 112945-52-5 | No | DSL | No |

* * * Section 16 - Other Information * * *

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

Literature References

None

Other Information

NFPA and HMIS:

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None

HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, we cannot give any guarantees regarding information from other sources, and expressly do not make warranties, nor assume any liability for its use.



Oatey

#30753

FOR CPVC, PVC
CLEAR PRIMER

IMPRIMADO PARA CPVC Y PVC



• DANGER-PELIGRO: EXTREMELY FLAMMABLE
• VAPORS MAY CAUSE FLASH FIRES • MAY IRRITATE EYES
AND SKIN • VAPOR HARMFUL • MAY IRRITATE
RESPIRATORY TRACT AND CAUSE CENTRAL NERVOUS
SYSTEM DEPRESSION • HARMFUL ON FATAL IF
INGESTED • READ LABEL CAREFULLY PRIOR TO USE.

• EXTREMAMENTE INFLAMMABLE • LOS VAPORES PUEDEN
PROVOCAR POCOJAZGO • PUEDEN IRRITAR LOS OJOS Y LA PIEL
• VAPORES DAÑINOS • PUEDEN IRRITAR EL TRACTO RESPIRATORIO Y
PROVOCAR DEPRESIÓN DEL SISTEMA NERVIOSO CENTRAL • DAÑO
FATAL SI SE TRAGA • LEA LA ETIQUETA CUIDADOSAMENTE ANTES
DE USARLO

MANUFACTURED BY OATEY AFTER 1989 100% SOLIDS
CAUTION: DO NOT DRINK OR GET IN EYES

MADE IN USA PROMO EN U.S.A.

32 fl. oz. 946 ml



MATERIAL SAFETY DATA SHEET

SECTION C

#6

MSDS Number: 1402C

Section 1

PRODUCT AND COMPANY IDENTIFICATION

Trade Name: OATEY CANADIAN PURPLE or CLEAR PRIMER NSF LISTED
Product Nos.: Purple - 30759, 30927, 31480, 31481, 31482, 31483 Clear - 30754, 31485, 31486, 31487, 31488, 31525, 31526, 31527, 31528
Product Use: Primer for PVC and CPVC Plastic Pipe
Formula: See section 3
Synonyms: Plastic Pipe Primer
Firm Name & Address: Oatey Company 4700 West 160th Street, Cleveland, Ohio 44135
www.oatey.com
Firm Phone No: (216) 267-7100
Emergency Phone Nos.: For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
Prepared by: Technical Department
Preparation Date: 09/11/2012

Section 2

HAZARDS IDENTIFICATION

Emergency Overview:

Purple or Clear liquid with an ether-like odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting, diarrhea and kidney or liver disorders. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.

Section 3

COMPOSITION/INFORMATION ON INGREDIENTS

| INGREDIENTS: | %wt/wt : | CAS NUMBER: | ACGIH TLV TWA: | OSHA PEL TWA | OTHER: |
|---------------------|----------|-------------|------------------------------|--------------|--------------|
| Tetrahydrofuran | 10 - 30% | 109-99-9 | 50 ppm(skin) 100 ppm STEL | 200 ppm | 25 ppm (Mfg) |
| Methyl Ethyl Ketone | 20 - 40% | 78-93-3 | 200 ppm 300 ppm | 200 ppm | None |
| Acetone | 20 - 40% | 67-64-1 | 500 ppm 750 ppm STEL | 1000 ppm | None |
| Cyclohexanone | 15 - 30% | 108-94-1 | 20 ppm(skin) 50 ppm STEL | 50 ppm | None |

OSHA Hazard Classification: Flammable, irritant, organ effects

Section 4

FIRST AID MEASURES

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber's Hand Cleaner or baby oil.
Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.
Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.
Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by

calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

Section 5

FIRE FIGHTING MEASURES

Flashpoint / 14 - 23 Degrees F. (-10 to -5 Degrees C) / CCCFP
Method:
Flammability: LEL = 1.8 % Volume, UEL = 11.8 % Volume
Extinguishing: Use dry chemical, CO₂, or foam to extinguish fire. Cool fire with water. Water may be ineffective as an extinguishing agent.
Media: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored
Special Fire Fighting Procedure:
Unusual Fire: Extremely flammable liquid. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.
And Explosion Hazards:
Hazardous Decomposition Products: Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

SECTION C

#6

Section 6

ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Remove all sources of ignition and ventilate area. Stop leak if it can be done without risk. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with an inert absorbent such as sand, earth or other non-combusting material. Put absorbent material in covered, labeled metal containers. Prevent liquid from entering watercourses, sewers and natural waterways. Report releases to authorities as required. See Section 13 for disposal information.

Section 7

HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use.
Storage: Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.
Other: "Empty" containers retain product residue and can be hazardous. Follow all MSDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

Section 8

EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.
Respiratory Protection: For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.
Skin Protection: Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.
Eye Protection: Safety glasses with side shields or safety goggles.

Section 9**PHYSICAL AND CHEMICAL PROPERTIES**

Boiling Point: 151 Degrees F / 66 Degrees C
Melting Point: Not applicable
Vapor Pressure: 145 mmHg @ 20 Degrees C
Vapor Density: (Air = 1) 2.5
Volatile Components: 99.96%
Solubility In Water: Negligible
pH: Not applicable
Specific Gravity: 0.84 +/- 0.02 @ 20 Degrees C
Evaporation Rate: (BUAC = 1) = 5.5 - 8.0
Appearance: Purple or Clear Liquid
Odor: Ether-Like
Will Dissolve In: Tetrahydrofuran
Material Is: Liquid

SECTION C**#6****Section 10****STABILITY AND REACTIVITY**

Stability: Stable.
Conditions To Avoid: Avoid heat, sparks, flames and other sources of ignition.
Hazardous Decomposition: Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.
Products: Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.
Incompatibility/ Materials To Avoid: Will not occur.
Hazardous Polymerization:

Section 11**TOXICOLOGICAL INFORMATION**

Inhalation: Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.
Skin: May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.
Eye: Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.
Ingestion: Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.
Chronic Toxicity: Prolonged or repeated overexposure cause dermatitis and damage to the kidney, liver, lungs and central nervous system.
Toxicity Data: Acetone: Oral rat LD50: 5,800 mg/kg
Inhalation rat LC50: 50,100 mg/m3/8 hours
Cyclohexanone: Oral rat LD50: 1,620 mg/kg
Inhalation rat LC50: 8,000 ppm/4 hours
Skin rabbit LD50: 1 mL/kg
Tetrahydrofuran: Oral rat LD50: 1,650 mg/kg
Inhalation rat LC50: 21,000 ppm/3 hours
Methyl Ethyl Ketone: Oral rat LD50: 2,737 mg/kg
Inhalation rat LC50: 23,500 mg/m3/8 hours
Skin rabbit LD50: 6,480 mg/kg
Sensitization: None of the components are known to cause sensitization.
Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA. The National Toxicology Program has reported that exposure of mice and rats to tetrahydrofuran (THF) vapor levels up to 1800 ppm 6 hr/day, 5 days/week for their lifetime caused an increased incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health is unclear at this time, and

may be related to "species specific" effects. Elevated incidences of tumors in humans have not been reported for THF. ACGIH has classified cyclohexanone (CYH) and tetrahydrofuran as "A3," Confirmed Animal Carcinogens with Unknown Relevance to Humans.

Mutagenicity: Cyclohexanone has been positive in bacterial and mammalian assays. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.

Reproductive Toxicity: Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

Medical Conditions Aggravated By Exposure: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

SECTION C

#6

Section 12 ECOLOGICAL INFORMATION

This product is not expected to be toxic to aquatic organisms.

Cyclohexanone: 96 hour LC50 values for fish is over 100 mg/l.

Tetrahydrofuran: 96 hour LC50 fathead minnow: 2160 mg/L.

Acetone: 96 hour LC50 for fish is greater than 100 mg/L.

Methyl Ethyl Ketone: 96 hour LC50 for fish is greater than 100 mg/L.

VOC Information: This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.

VOC Level: Maximum 550 g/L per SCAQMD Test Method 316A.

Section 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.

RCRA Hazardous Waste Number: U002, U057, U159, U213

EPA Hazardous Waste ID Number: D001, D035, F003, F0005

EPA Hazard Waste Number: Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content)

Section 14 TRANSPORT INFORMATION

| DOT | <u>Less than 1 Liter (0.3 gal)</u> | <u>Greater than 1 Liter (0.3 gal)</u> |
|-----------------------|--|---|
| UN/NA Number: | None | UN1993 |
| Proper Shipping Name: | Consumer Commodity | Flammable Liquid, NOS (Methyl Ethyl Ketone, Acetone) |
| Hazard Class: | ORM-D | 3 |
| Packing Group: | None | PGII |
| Hazard Labels: | None | Flammable Liquid |
| IMDG | | |
| UN Number: | UN1993 | UN1993 |
| Proper Shipping Name: | Flammable Liquid, NOS (Limited Quantity) | Flammable Liquid, NOS (Methyl Ethyl Ketone, Acetone) |
| Hazard Class: | 3 | 3 |
| Packing Group: | II | II |
| Label: | None (Limited Quantities are expected from labeling) | Class 3 (Flammable Liquid) |
| Flashpoint (deg C) | -10 to -5 Degrees C | -10 to -5 Degrees C |

Section 15 REGULATORY INFORMATION

Hazard Category for Acute Health, Chronic Health, Flammable

Section 311/312:

Section 302 This product does not contain chemicals regulated under SARA Section 302.

Extremely Hazardous

Substances (TPQ):

Section 313 Toxic

Chemicals:

CERCLA 103

Reportable

Quantity:

This product does not contain chemicals subject to SARA Section 313 Reporting requirements.

Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Tetrahydrofuran (30% maximum) of 1,000 lbs, is 3,333 lbs.

Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California

Proposition 65:

This product does not contain any chemicals subject to California Proposition 65 regulations.

TSCA Inventory

Canadian WHIMS

Classification:

All of the components of this product are listed on the TSCA inventory. Class B, Division 2; Class D, Division 2, Subdivision B; Class D, Division 2, Subdivision A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Section 16

OTHER INFORMATION

NFPA and HMIS:

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None

HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, we cannot give any guarantees regarding information from other sources, and expressly do not make warranties, nor assume any liability for its use.

Template: tmpl-cn-e1

SECTION C

#6



SECTION C



SECTION C

#7

Material Name: OATEY PURPLE PRIMER/CLEANER

*** Section 1 - Product and Company Identification ***

MSDS #1401E

Part Numbers: 30768, 30780, 30783, 30796, 30806, 31966, 31967, 31968, 31969

Manufacturer Information

Oatey Co.
4700 West 160th Street
Cleveland, OH 44135

Phone: 216-267-7100

For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1- 703-527-3887.

*** Section 2 - Hazards Identification ***

GHS Classification:

Flammable Liquids - Category 2
Acute Toxicity Oral - Category 4
Acute Toxicity Dermal - Category 4
Acute Toxicity Inhalation - Category 4
Eye Damage/Irritation - Category 2A
Carcinogenicity - Category 2
Specific Target Organ Toxicity Single Exposure - Category 3

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

Danger

Hazard Statements

Highly flammable liquid and vapor.
Harmful if swallowed.
Harmful in contact with skin.
Harmful if inhaled.
Causes serious eye irritation.
Contains a chemical classified by the US EPA as a suspected possible carcinogen.
May cause respiratory irritation.
May cause drowsiness or dizziness.

Precautionary Statements

Prevention

Keep away from heat/sparks/open flames and hot surfaces. - No smoking.

Material Name: OATEY PURPLE PRIMER/CLEANER

Keep container tightly closed.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/eye protection/face protection.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing fume/gas/mist/vapors.
Use only outdoors or in a well-ventilated area.

SECTION C**#7****Response**

If on skin (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
If swallowed: Call a poison center or doctor/physician if you feel unwell. Rinse mouth. Do not induce vomiting.
If inhaled: 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.
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.
If exposed or concerned: Get medical advice/attention.
In case of fire: Use dry chemical, CO₂, or foam to extinguish fire.

Storage

Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

*** * * Section 3 - Composition / Information on Ingredients * * ***

| CAS # | Component | Percent |
|----------|---------------------|---------|
| 67-64-1 | Acetone | 60-90 |
| 78-93-3 | Methyl ethyl ketone | 10-20 |
| 108-94-1 | Cyclohexanone | 3-10 |
| 109-99-9 | Tetrahydrofuran | 0-10 |

*** * * Section 4 - First Aid Measures * * *****First Aid: Eyes**

If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

First Aid: Skin

Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with hand cleaner or baby oil.

Material Name: OATEY PURPLE PRIMER/CLEANER

First Aid: Ingestion

DO NOT INDUCE VOMITING. Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

First Aid: Inhalation

If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

*** * * Section 5 - Fire Fighting Measures * * ***

General Fire Hazards

See Section 9 for Flammability Properties.

Highly flammable liquid and vapor. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

Hazardous Combustion Products

Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

Extinguishing Media

Use dry chemical, CO₂, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.

Unsuitable Extinguishing Media

None.

Fire Fighting Equipment/Instructions

Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

*** * * Section 6 - Accidental Release Measures * * ***

Recovery and Neutralization

Stop leak if it can be done without risk.

Materials and Methods for Clean-Up

Remove all sources of ignition and ventilate area. Soak up spill with an inert absorbent such as sand, earth or other noncombusting material. Put absorbent material in covered, labeled metal containers.

Emergency Measures

Isolate area. Keep unnecessary personnel away.

Personal Precautions and Protective Equipment

Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high.

Environmental Precautions

Prevent liquid from entering watercourses, sewers and natural waterways.

Prevention of Secondary Hazards

None

***** Section 7 - Handling and Storage *****

Handling Procedures

Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use. "Empty" containers retain product residue and can be hazardous. Follow all SDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

Storage Procedures

Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.

Incompatibilities

Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

***** Section 8 - Exposure Controls / Personal Protection *****

Component Exposure Limits

Acetone (67-64-1)

ACGIH: 500 ppm TWA
750 ppm STEL
OSHA: 1000 ppm TWA; 2400 mg/m³ TWA
NIOSH: 250 ppm TWA; 590 mg/m³ TWA

Methyl ethyl ketone (78-93-3)

ACGIH: 200 ppm TWA
300 ppm STEL
OSHA: 200 ppm TWA; 590 mg/m³ TWA
NIOSH: 200 ppm TWA; 590 mg/m³ TWA
300 ppm STEL; 885 mg/m³ STEL

Cyclohexanone (108-94-1)

ACGIH: 20 ppm TWA
50 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 50 ppm TWA; 200 mg/m³ TWA
NIOSH: 25 ppm TWA; 100 mg/m³ TWA
Potential for dermal absorption

Tetrahydrofuran (109-99-9)

ACGIH: 50 ppm TWA
100 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 200 ppm TWA; 590 mg/m³ TWA
NIOSH: 200 ppm TWA; 590 mg/m³ TWA
250 ppm STEL; 735 mg/m³ STEL

Material Name: OATEY PURPLE PRIMER/CLEANER

Engineering Measures

Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.

Personal Protective Equipment: Respiratory

For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Personal Protective Equipment: Hands

Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

Personal Protective Equipment: Eyes

Safety glasses with side shields or safety goggles.

Personal Protective Equipment: Skin and Body

No additional protective equipment needed.

*** Section 9 - Physical & Chemical Properties ***

| | | | |
|--|------------------------|--|-----------------------|
| Appearance: | Purple | Odor: | Ether-like |
| Physical State: | Liquid | pH: | NA |
| Vapor Pressure: | 145 mmHg @ 20°C | Vapor Density: | 2.5 |
| Boiling Point: | 151°F (66°C) | Melting Point: | NA |
| Solubility (H2O): | Negligible | Specific Gravity: | 0.81 +/- 0.02 @ 20°C |
| Evaporation Rate: | (BUAC = 1) = 5.5 - 8.0 | VOC: | 99.96% |
| Octanol/H2O Coeff.: | ND | Flash Point: | 14-23°F (-10 to -5°C) |
| Flash Point Method: | CCCFP | Upper Flammability Limit (UFL): | 11.8 |
| Lower Flammability Limit (LFL): | 1.8 | Burning Rate: | ND |
| Auto Ignition: | ND | | |

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Avoid heat, sparks, flames and other sources of ignition.

Incompatible Products

Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

Hazardous Decomposition Products

Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

* * * **Section 11 - Toxicological Information** * * *

Acute Toxicity

SECTION C

#7

Component Analysis - LD50/LC50

Acetone (67-64-1)

Oral LD50 Rat 5800 mg/kg

Methyl ethyl ketone (78-93-3)

Inhalation LC50 Mouse 32 g/m³ 4 h; Oral LD50 Rat 2737 mg/kg; Dermal LD50 Rabbit 6480 mg/kg

Cyclohexanone (108-94-1)

Inhalation LC50 Rat 10.7 mg/L 4 h; Inhalation LC50 Rat 8000 ppm 4 h; Oral LD50 Rat 800 mg/kg; Dermal LD50 Rabbit 948 mg/kg

Tetrahydrofuran (109-99-9)

Inhalation LC50 Rat 53.9 mg/L 4 h; Inhalation LC50 Rat 180 mg/L 1 h; Oral LD50 Rat 1650 mg/kg

Potential Health Effects: Skin Corrosion Property/Stimulativeness

May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.

Potential Health Effects: Ingestion

Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

Potential Health Effects: Inhalation

Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

Cyclohexanone has been positive in bacterial and mammalian assays. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.

Carcinogenicity

A: General Product Information

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.

Material Name: OATEY PURPLE PRIMER/CLEANER

B: Component Carcinogenicity

Acetone (67-64-1)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

Cyclohexanone (108-94-1)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

Tetrahydrofuran (109-99-9)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

SECTION C #7

Reproductive Toxicity

Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

Specified Target Organ General Toxicity: Single Exposure

May cause respiratory irritation. Inhalation of high concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ toxicity repeat exposure effects.

Aspiration Respiratory Organs Hazard

Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

This product is not expected to be toxic to aquatic organisms.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Acetone (67-64-1)

Test & Species

| | |
|--------------------------------|--------------------------------|
| 96 Hr LC50 Oncorhynchus mykiss | 4.74 - 6.33 mL/L |
| 96 Hr LC50 Pimephales promelas | 6210 - 8120 mg/L [static] |
| 96 Hr LC50 Lepomis macrochirus | 8300 mg/L |
| 48 Hr EC50 Daphnia magna | 10294 - 17704 mg/L [Static] |
| 48 Hr EC50 Daphnia magna | 12600 - 12700 mg/L |

Conditions

Methyl ethyl ketone (78-93-3)

Test & Species

| | |
|--------------------------------|----------------------------------|
| 96 Hr LC50 Pimephales promelas | 3130-3320 mg/L [flow-through] |
| 48 Hr EC50 Daphnia magna | >520 mg/L |
| 48 Hr EC50 Daphnia magna | 5091 mg/L |
| 48 Hr EC50 Daphnia magna | 4025 - 6440 mg/L [Static] |

Conditions

Material Name: OATEY PURPLE PRIMER/CLEANER

Cyclohexanone (108-94-1)

Test & Species

| | |
|--------------------------------|-----------------------------|
| 96 Hr LC50 Pimephales promelas | 481-578 mg/L [flow-through] |
| 96 Hr LC50 Pimephales promelas | 8.9 mg/L |
| 96 Hr EC50 Chlorella vulgaris | 20 mg/L |
| 24 Hr EC50 Daphnia magna | 800 mg/L |

Conditions

SECTION C

#7

Tetrahydrofuran (109-99-9)

Test & Species

| | |
|--------------------------------|-------------------------------|
| 96 Hr LC50 Pimephales promelas | 1970-2360 mg/L [flow-through] |
| 96 Hr LC50 Pimephales promelas | 2700-3600 mg/L [static] |
| 24 Hr EC50 Daphnia magna | 5930 mg/L |

Conditions

Persistence/Degradability

No information available for the product.

Bioaccumulation

No information available for the product.

Mobility in Soil

No information available for the product.

* * * Section 13 - Disposal Considerations * * *

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * Section 14 - Transportation Information * * *

DOT Information

For Greater than 1 liter (0.3 gal):

Shipping Name: Flammable Liquid, n.o.s (Methyl Ethyl Ketone, Acetone)

UN #: 1993 **Hazard Class:** 3 **Packing Group:** II

Required Label(s): Flammable Liquid

For Less than 1 liter (0.3 gal):

Shipping Name: Consumer Commodity, ORM-D

IMDG Information

For Greater than 1 liter (0.3 gal):

Shipping Name: Flammable Liquid, n.o.s (Methyl Ethyl Ketone, Acetone)

UN #: 1993 **Hazard Class:** 3 **Packing Group:** II

Required Label(s): Flammable Liquid

For Less than 1 liter (0.3 gal):

Shipping Name: Flammable Liquid, n.o.s (Limited Quantity)

UN #: 1993 **Hazard Class:** 3 **Packing Group:** II

Material Name: OATEY PURPLE PRIMER/CLEANER

Required Label(s): None (Limited Quantities are expected from labeling)

*** * * Section 15 - Regulatory Information * * ***

SECTION C

#7

Regulatory Information

US Federal Regulations

Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Acetone (67-64-1)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

Methyl ethyl ketone (78-93-3)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

Cyclohexanone (108-94-1)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

Tetrahydrofuran (109-99-9)

CERCLA: 1000 lb final RQ; 454 kg final RQ

State Regulations

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

| Component | CAS | CA | MA | MN | NJ | PA | RI |
|---------------------|----------|-----|-----|-----|-----|-----|----|
| Acetone | 67-64-1 | Yes | Yes | Yes | Yes | Yes | No |
| Methyl ethyl ketone | 78-93-3 | Yes | Yes | Yes | Yes | Yes | No |
| Cyclohexanone | 108-94-1 | Yes | Yes | Yes | Yes | Yes | No |
| Tetrahydrofuran | 109-99-9 | Yes | Yes | Yes | Yes | Yes | No |

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

| Component | CAS # | Minimum Concentration |
|---------------------|----------|-----------------------|
| Acetone | 67-64-1 | 1 % |
| Methyl ethyl ketone | 78-93-3 | 1 % |
| Cyclohexanone | 108-94-1 | 0.1 % |
| Tetrahydrofuran | 109-99-9 | 1 % |

Additional Regulatory Information

A: General Product Information

This product contains trace amounts of chemicals known to the State of California to cause cancer. Under normal use conditions, exposure to these chemicals at levels above the State of California "No Significant Risk Level" (NSRL) are unlikely. The use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 will minimize exposure to these chemicals.

Material Name: OATEY PURPLE PRIMER/CLEANER**B: Component Analysis - Inventory**

| Component | CAS # | TSCA | CAN | EEC |
|---------------------|----------|------|-----|--------|
| Acetone | 67-64-1 | Yes | DSL | EINECS |
| Methyl ethyl ketone | 78-93-3 | Yes | DSL | EINECS |
| Cyclohexanone | 108-94-1 | Yes | DSL | EINECS |
| Tetrahydrofuran | 109-99-9 | Yes | DSL | EINECS |

SECTION C
#7*** * * Section 16 - Other Information * * *****Key/Legend**

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

Literature References

None

Other Information

NFPA and HMIS:

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None

HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, we cannot give any guarantees regarding information from other sources, and expressly do not make warranties, nor assume any liability for its use.

End of Sheet





SECTION C

#8

Material Name: OATEY PVC RAIN-R-SHINE BLUE CEMENT

*** Section 1 - Product and Company Identification ***

MSDS #1104E

Part Numbers: 30890(TV), 30891(TV), 30893(TV), 30894, 30895, 30896, 31954, 31955, 31956, 31957

Manufacturer Information

Oatey Co.
4700 West 160th Street
Cleveland, OH 44135

Phone: 216-267-7100

For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1- 703-527-3887.

*** Section 2 - Hazards Identification ***

GHS Classification:

Flammable Liquids - Category 2
Acute Toxicity Oral - Category 4
Acute Toxicity Dermal - Category 4
Acute Toxicity Inhalation - Category 4
Eye Damage/Irritation - Category 2A
Carcinogenicity - Category 2
Specific Target Organ Toxicity Single Exposure - Category 3

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

Danger

Hazard Statements

Highly flammable liquid and vapor.
Harmful if swallowed.
Harmful in contact with skin.
Harmful if inhaled.
Causes serious eye irritation.
Contains a chemical classified by the US EPA as a suspected possible carcinogen.
May cause respiratory irritation.
May cause drowsiness or dizziness.

Material Name: OATEY PVC RAIN-R-SHINE BLUE CEMENT

Precautionary Statements

Prevention

Keep away from heat/sparks/open flames and hot surfaces. - No smoking.
Keep container tightly closed.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/eye protection/face protection.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing fume/gas/mist/vapors.
Use only outdoors or in a well-ventilated area.

Response

If on skin (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
If swallowed: Call a poison center or doctor/physician if you feel unwell. Rinse mouth. Do not induce vomiting.
If inhaled: 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.
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.
If exposed or concerned: Get medical advice/attention.
In case of fire: Use dry chemical, CO₂, or foam to extinguish fire.

Storage

Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

*** Section 3 - Composition / Information on Ingredients ***

| CAS # | Component | Percent |
|-------------|--|---------|
| 109-99-9 | Tetrahydrofuran | 40-60 |
| 108-94-1 | Cyclohexanone | 10-25 |
| 67-64-1 | Acetone | 10-25 |
| 9002-86-2 | PVC (Chloroethylene, polymer) | 12-20 |
| 78-93-3 | Methyl ethyl ketone | 5-15 |
| 112945-52-5 | Silica, amorphous, fumed, crystalline-free | 1-4 |

*** Section 4 - First Aid Measures ***

First Aid: Eyes

If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

SECTION C

#8

Material Name: OATEY PVC RAIN-R-SHINE BLUE CEMENT

First Aid: Skin

Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with hand cleaner or baby oil.

First Aid: Ingestion

DO NOT INDUCE VOMITING. Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

First Aid: Inhalation

If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

***** Section 5 - Fire Fighting Measures *****

General Fire Hazards

See Section 9 for Flammability Properties.

Highly flammable liquid and vapor. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

Hazardous Combustion Products

Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

Extinguishing Media

Use dry chemical, CO₂, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.

Unsuitable Extinguishing Media

None.

Fire Fighting Equipment/Instructions

Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

***** Section 6 - Accidental Release Measures *****

Recovery and Neutralization

Stop leak if it can be done without risk.

Materials and Methods for Clean-Up

Remove all sources of ignition and ventilate area. Soak up spill with an inert absorbent such as sand, earth or other non-combusting material. Put absorbent material in covered, labeled metal containers.

Emergency Measures

Isolate area. Keep unnecessary personnel away.

Personal Precautions and Protective Equipment

Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high.

Environmental Precautions

Prevent liquid from entering watercourses, sewers and natural waterways.

Prevention of Secondary Hazards

None

SECTION C

#8

*** Section 7 - Handling and Storage ***

Handling Procedures

Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use. Other: "Empty" containers retain product residue and can be hazardous. Follow all SDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

Storage Procedures

Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.

Incompatibilities

Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

*** Section 8 - Exposure Controls / Personal Protection ***

Component Exposure Limits

Tetrahydrofuran (109-99-9)

ACGIH: 50 ppm TWA
100 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 200 ppm TWA; 590 mg/m3 TWA
NIOSH: 200 ppm TWA; 590 mg/m3 TWA
250 ppm STEL; 735 mg/m3 STEL

Cyclohexanone (108-94-1)

ACGIH: 20 ppm TWA
50 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 50 ppm TWA; 200 mg/m3 TWA
NIOSH: 25 ppm TWA; 100 mg/m3 TWA
Potential for dermal absorption

Acetone (67-64-1)

ACGIH: 500 ppm TWA
750 ppm STEL
OSHA: 1000 ppm TWA; 2400 mg/m3 TWA
NIOSH: 250 ppm TWA; 590 mg/m3 TWA

PVC (Chloroethylene, polymer) (9002-86-2)

ACGIH: 1 mg/m3 TWA (respirable fraction)

Methyl ethyl ketone (78-93-3)

ACGIH: 200 ppm TWA
300 ppm STEL
OSHA: 200 ppm TWA; 590 mg/m3 TWA
NIOSH: 200 ppm TWA; 590 mg/m3 TWA
300 ppm STEL; 885 mg/m3 STEL

SECTION C
#8

Material Name: OATEY PVC RAIN-R-SHINE BLUE CEMENT

Engineering Measures

Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.

Personal Protective Equipment: Respiratory

For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Personal Protective Equipment: Hands

Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

Personal Protective Equipment: Eyes

Safety glasses with side shields or safety goggles.

Personal Protective Equipment: Skin and Body

No additional protective equipment needed.

*** Section 9 - Physical & Chemical Properties ***

| | | | |
|--|------------------------|--|---|
| Appearance: | Blue | Odor: | Ether-like |
| Physical State: | Liquid | pH: | NA |
| Vapor Pressure: | 145 mmHg @ 20°C | Vapor Density: | 2.5 |
| Boiling Point: | 151°F (66°C) | Melting Point: | NA |
| Solubility (H2O): | Negligible | Specific Gravity: | 0.94 +/- 0.02 @ 20°C |
| Evaporation Rate: | (BUAC = 1) = 5.5 - 8.0 | VOC: | 80-84% Maximum 510 g/L per SCAQMD Test Method 316A. |
| Octanol/H2O Coeff.: | ND | Flash Point: | 14-23°F (-10 to -5°C) |
| Flash Point Method: | CCCFP | Upper Flammability Limit (UFL): | 11.8 |
| Lower Flammability Limit (LFL): | 1.8 | Burning Rate: | ND |
| Auto Ignition: | ND | | |

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Avoid heat, sparks, flames and other sources of ignition.

Incompatible Products

Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics.

Hazardous Decomposition Products

Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

*** Section 11 - Toxicological Information ***

Acute Toxicity

SECTION C

#8

Component Analysis - LD50/LC50

Tetrahydrofuran (109-99-9)

Inhalation LC50 Rat 53.9 mg/L 4 h; Inhalation LC50 Rat 180 mg/L 1 h; Oral LD50 Rat 1650 mg/kg

Cyclohexanone (108-94-1)

Inhalation LC50 Rat 10.7 mg/L 4 h; Inhalation LC50 Rat 8000 ppm 4 h; Oral LD50 Rat 800 mg/kg; Dermal LD50 Rabbit 948 mg/kg

Acetone (67-64-1)

Oral LD50 Rat 5800 mg/kg

Methyl ethyl ketone (78-93-3)

Inhalation LC50 Mouse 32 g/m³ 4 h; Oral LD50 Rat 2737 mg/kg; Dermal LD50 Rabbit 6480 mg/kg

Silica, amorphous, fumed, crystalline-free (112945-52-5)

Oral LD50 Rat 3160 mg/kg

Potential Health Effects: Skin Corrosion Property/Stimulativeness

May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.

Potential Health Effects: Ingestion

Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

Potential Health Effects: Inhalation

Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

Cyclohexanone has been positive in bacterial and mammalian assays. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.

Material Name: OATEY PVC RAIN-R-SHINE BLUE CEMENT

Carcinogenicity

A: General Product Information

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.

B: Component Carcinogenicity

Tetrahydrofuran (109-99-9)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

Cyclohexanone (108-94-1)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

Acetone (67-64-1)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

PVC (Chloroethylene, polymer) (9002-86-2)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Supplement 7 [1987]; Monograph 19 [1979] (Group 3 (not classifiable))

Silica, amorphous, fumed, crystalline-free (112945-52-5)

IARC: Monograph 68 [1997] (listed under Amorphous silica) (Group 3 (not classifiable))

Reproductive Toxicity

Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

Specified Target Organ General Toxicity: Single Exposure

May cause respiratory irritation. Inhalation of high concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ toxicity repeat exposure effects.

Aspiration Respiratory Organs Hazard

Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

This product is not expected to be toxic to aquatic organisms.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Tetrahydrofuran (109-99-9)

Test & Species

Conditions

Material Name: OATEY PVC RAIN-R-SHINE BLUE CEMENT

| | |
|--------------------------------|----------------------------------|
| 96 Hr LC50 Pimephales promelas | 1970-2360 mg/L [flow-through] |
| 96 Hr LC50 Pimephales promelas | 2700-3600 mg/L [static] |
| 24 Hr EC50 Daphnia magna | 5930 mg/L |

SECTION C
#8**Cyclohexanone (108-94-1)****Test & Species****Conditions**

| | |
|--------------------------------|-----------------------------|
| 96 Hr LC50 Pimephales promelas | 481-578 mg/L [flow-through] |
| 96 Hr LC50 Pimephales promelas | 8.9 mg/L |
| 96 Hr EC50 Chlorella vulgaris | 20 mg/L |
| 24 Hr EC50 Daphnia magna | 800 mg/L |

Acetone (67-64-1)**Test & Species****Conditions**

| | |
|--------------------------------|--------------------------------|
| 96 Hr LC50 Oncorhynchus mykiss | 4.74 - 6.33 mL/L |
| 96 Hr LC50 Pimephales promelas | 6210 - 8120 mg/L [static] |
| 96 Hr LC50 Lepomis macrochirus | 8300 mg/L |
| 48 Hr EC50 Daphnia magna | 10294 - 17704 mg/L [Static] |
| 48 Hr EC50 Daphnia magna | 12600 - 12700 mg/L |

Methyl ethyl ketone (78-93-3)**Test & Species****Conditions**

| | |
|--------------------------------|----------------------------------|
| 96 Hr LC50 Pimephales promelas | 3130-3320 mg/L [flow-through] |
| 48 Hr EC50 Daphnia magna | >520 mg/L |
| 48 Hr EC50 Daphnia magna | 5091 mg/L |
| 48 Hr EC50 Daphnia magna | 4025 - 6440 mg/L [Static] |

Persistence/Degradability

No information available for the product.

Bioaccumulation

No information available for the product.

Mobility in Soil

No information available for the product.

| |
|---|
| * * * Section 13 - Disposal Considerations * * * |
|---|

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

US EPA Waste Number & Descriptions

Material Name: OATEY PVC RAIN-R-SHINE BLUE CEMENT

Component Waste Numbers

Tetrahydrofuran (109-99-9)

RCRA: waste number U213 (Ignitable waste)

Cyclohexanone (108-94-1)

RCRA: waste number U057 (Ignitable waste)

Acetone (67-64-1)

RCRA: waste number U002 (Ignitable waste)

Methyl ethyl ketone (78-93-3)

RCRA: waste number U159 (Ignitable waste, Toxic waste)
200.0 mg/L regulatory level

SECTION C

#8

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

*** * * Section 14 - Transportation Information * * ***

DOT Information

For Greater than 1 liter (0.3 gal):

Shipping Name: Adhesives

UN #: 1133 Hazard Class: 3 Packing Group: II

Required Label(s): Flammable Liquid

For Less than 1 liter (0.3 gal):

Shipping Name: Consumer Commodity, ORM-D

IMDG Information

For Greater than 1 liter (0.3 gal):

Shipping Name: Adhesives

UN #: 1133 Hazard Class: 3 Packing Group: II

Required Label(s): Flammable Liquid

For Less than 1 liter (0.3 gal):

Shipping Name: Adhesives

UN #: 1133 Hazard Class: 3 Packing Group: II

Required Label(s): None (Limited Quantities are exempt from labeling)

*** * * Section 15 - Regulatory Information * * ***

Regulatory Information

US Federal Regulations

Material Name: OATEY PVC RAIN-R-SHINE BLUE CEMENT

Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Tetrahydrofuran (109-99-9)

CERCLA: 1000 lb final RQ; 454 kg final RQ

Cyclohexanone (108-94-1)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

Acetone (67-64-1)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

Methyl ethyl ketone (78-93-3)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

State Regulations

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

| Component | CAS | CA | MA | MN | NJ | PA | RI |
|-------------------------------|-----------|-----|-----|-----|-----|-----|----|
| Tetrahydrofuran | 109-99-9 | Yes | Yes | Yes | Yes | Yes | No |
| Cyclohexanone | 108-94-1 | Yes | Yes | Yes | Yes | Yes | No |
| Acetone | 67-64-1 | Yes | Yes | Yes | Yes | Yes | No |
| PVC (Chloroethylene, polymer) | 9002-86-2 | No | No | No | Yes | No | No |
| Methyl ethyl ketone | 78-93-3 | Yes | Yes | Yes | Yes | Yes | No |

This product contains trace amounts of chemicals known to the State of California to cause cancer. Under normal use conditions, exposure to these chemicals at levels above the State of California "No Significant Risk Level" (NSRL) are unlikely. The use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 will minimize exposure to these chemicals.

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

| Component | CAS # | Minimum Concentration |
|---------------------|----------|-----------------------|
| Tetrahydrofuran | 109-99-9 | 1 % |
| Cyclohexanone | 108-94-1 | 0.1 % |
| Acetone | 67-64-1 | 1 % |
| Methyl ethyl ketone | 78-93-3 | 1 % |

Material Name: OATEY PVC RAIN-R-SHINE BLUE CEMENT**Additional Regulatory Information****Component Analysis - Inventory****SECTION C****#8**

| Component | CAS # | TSCA | CAN | EEC |
|--|-------------|------|-----|--------|
| Tetrahydrofuran | 109-99-9 | Yes | DSL | EINECS |
| Cyclohexanone | 108-94-1 | Yes | DSL | EINECS |
| Acetone | 67-64-1 | Yes | DSL | EINECS |
| PVC (Chloroethylene, polymer) | 9002-86-2 | Yes | DSL | ELINCS |
| Methyl ethyl ketone | 78-93-3 | Yes | DSL | EINECS |
| Silica, amorphous, fumed, crystalline-free | 112945-52-5 | No | DSL | No |

*** * * Section 16 - Other Information * * *****Key/Legend**

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

Literature References

None

Other Information

NFPA and HMIS:

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None

HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, we cannot give any guarantees regarding information from other sources, and expressly do not make warranties, nor assume any liability for its use.

End of Sheet



#30821

Oatey

FOR ABS, CPVC, PVC

ALL PURPOSE CEMENT

FOR ABS, CPVC, PVC

MULTI-USE CEMENT

DANGER/PELIGRO:

EXTREMELY FLAMMABLE • VAPORS MAY CAUSE FLASH FIRES
MAY IRRITATE EYES AND SKIN • VAPOR FORMS
MAY IRRITATE RESPIRATORY TRACT AND CAUSE
CENTRAL NERVOUS SYSTEM DEPRESSION • HARMFUL
IF INHALED • IF SWALLOWED • READ LABEL CAREFULLY PRIOR TO USE
• EXTREMADAMENTE INFLAMMABLE • LOS VAPORES PUEDEN
PROVOCAR FOCOS DE FUEGO • PUEDE IRRITAR LOS OJOS Y LA PIEL
• LOS VAPORES PUEDEN IRRITAR EL TRACTO RESPIRATORIO
Y PROVOCAR DEPRESIÓN DEL SISTEMA NERVIOSO CENTRAL
• SI SE INHALE, SI SE TRAGA • LEA LA ETIQUETA
CUIDADOSAMENTE ANTES DE USARLO

MADE IN U.S.A. BY OATEY COMPANY, INC. 1000 South
Cleveland, OH 44115-0001 (313) 444-1000 www.oatey.com
OATEY MEXICO, S. de C.V.

8 fl. oz. 237 ml

SECTION C



SECTION C

#9

Material Name: OATEY ALL PURPOSE CEMENT

*** Section 1 - Product and Company Identification ***

MSDS #1106E

Part Numbers: Milky – 30818(TV), 30821(TV), 30834(TV), 30847, 30848, 31650, 31651, 32208, 32209

Manufacturer Information

Oatey Co.
4700 West 160th Street
Cleveland, OH 44135

Phone: 216-267-7100

For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1- 703-527-3887.

*** Section 2 - Hazards Identification ***

GHS Classification:

Flammable Liquids - Category 2
Acute Toxicity Oral - Category 4
Acute Toxicity Dermal - Category 4
Acute Toxicity Inhalation - Category 4
Eye Damage/Irritation - Category 2A
Carcinogenicity - Category 2
Specific Target Organ Toxicity Single Exposure - Category 3

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

Danger

Hazard Statements

Highly flammable liquid and vapor.
Harmful if swallowed.
Harmful in contact with skin.
Harmful if inhaled.
Causes serious eye irritation.
Contains a chemical classified by the US EPA as a suspected possible carcinogen.
May cause respiratory irritation.
May cause drowsiness or dizziness.

Precautionary Statements

Prevention

Material Name: OATEY ALL PURPOSE CEMENT

Keep away from heat/sparks/open flames and hot surfaces. - No smoking.
Keep container tightly closed.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/eye protection/face protection.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing fume/gas/mist/vapors.
Use only outdoors or in a well-ventilated area.

SECTION C

#9

Response

If on skin (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth.

If inhaled: 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.

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.

If exposed or concerned: Get medical advice/attention.

In case of fire: Use dry chemical, CO₂, or foam to extinguish fire.

Storage

Store in a well-ventilated place. Keep cool.

Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

*** Section 3 - Composition / Information on Ingredients ***

| CAS # | Component | Percent |
|-------------|--|---------|
| 109-99-9 | Tetrahydrofuran | 30-45 |
| 108-94-1 | Cyclohexanone | 10-20 |
| 67-64-1 | Acetone | 10-20 |
| 78-93-3 | Methyl ethyl ketone | 8-18 |
| 9002-86-2 | PVC (Chloroethylene, polymer) | 8-15 |
| 68648-82-8 | Ethene, chloro-, homopolymer, chlorinated | 3-7 |
| 112945-52-5 | Silica, amorphous, fumed, crystalline-free | 1-5 |

*** Section 4 - First Aid Measures ***

First Aid: Eyes

If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

Material Name: OATEY ALL PURPOSE CEMENT

First Aid: Skin

Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with hand cleaner or baby oil.

First Aid: Ingestion

DO NOT INDUCE VOMITING. Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

First Aid: Inhalation

If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

*** * * Section 5 - Fire Fighting Measures * * ***

General Fire Hazards

See Section 9 for Flammability Properties.

Highly flammable liquid and vapor. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

Hazardous Combustion Products

Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

Extinguishing Media

Use dry chemical, CO₂, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.

Unsuitable Extinguishing Media

None.

Fire Fighting Equipment/Instructions

Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

*** * * Section 6 - Accidental Release Measures * * ***

Recovery and Neutralization

Stop leak if it can be done without risk.

Materials and Methods for Clean-Up

Remove all sources of ignition and ventilate area. Soak up spill with an inert absorbent such as sand, earth or other noncombusting material. Put absorbent material in covered, labeled metal containers.

Emergency Measures

Isolate area. Keep unnecessary personnel away.

Personal Precautions and Protective Equipment

Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high.

Environmental Precautions

Prevent liquid from entering watercourses, sewers and natural waterways.

Prevention of Secondary Hazards

None

Material Name: OATEY ALL PURPOSE CEMENT

***** Section 7 - Handling and Storage *****

Handling Procedures

Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use. "Empty" containers retain product residue and can be hazardous. Follow all SDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

Storage Procedures

Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.

Incompatibilities

Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

***** Section 8 - Exposure Controls / Personal Protection *****

Component Exposure Limits

Tetrahydrofuran (109-99-9)

ACGIH: 50 ppm TWA
100 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 200 ppm TWA; 590 mg/m3 TWA
NIOSH: 200 ppm TWA; 590 mg/m3 TWA
250 ppm STEL; 735 mg/m3 STEL

Cyclohexanone (108-94-1)

ACGIH: 20 ppm TWA
50 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 50 ppm TWA; 200 mg/m3 TWA
NIOSH: 25 ppm TWA; 100 mg/m3 TWA
Potential for dermal absorption

Acetone (67-64-1)

ACGIH: 500 ppm TWA
750 ppm STEL
OSHA: 1000 ppm TWA; 2400 mg/m3 TWA
NIOSH: 250 ppm TWA; 590 mg/m3 TWA

Methyl ethyl ketone (78-93-3)

ACGIH: 200 ppm TWA
300 ppm STEL
OSHA: 200 ppm TWA; 590 mg/m3 TWA
NIOSH: 200 ppm TWA; 590 mg/m3 TWA
300 ppm STEL; 885 mg/m3 STEL

PVC (Chloroethylene, polymer) (9002-86-2)

ACGIH: 1 mg/m3 TWA (respirable fraction)

SECTION C
#9

Material Name: OATEY ALL PURPOSE CEMENT

Engineering Measures

Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.

Personal Protective Equipment: Respiratory

For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Personal Protective Equipment: Hands

Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

Personal Protective Equipment: Eyes

Safety glasses with side shields or safety goggles.

Personal Protective Equipment: Skin and Body

No additional protective equipment needed.

*** Section 9 - Physical & Chemical Properties ***

| | | | |
|--|------------------------|--|-----------------------|
| Appearance: | Milky | Odor: | Ether-like |
| Physical State: | Liquid | pH: | NA |
| Vapor Pressure: | 145 mmHg @ 20°C | Vapor Density: | 2.5 |
| Boiling Point: | 151°F (66°C) | Melting Point: | NA |
| Solubility (H2O): | Negligible | Specific Gravity: | 0.94 +/- 0.02 @ 20°C |
| Evaporation Rate: | (BUAC = 1) = 5.5 - 8.0 | VOC: | 80-84% |
| Octanol/H2O Coeff.: | ND | Flash Point: | 14-23°F (-10 to -5°C) |
| Flash Point Method: | CCCFP | Upper Flammability Limit (UFL): | 11.8 |
| Lower Flammability Limit (LFL): | 1.8 | Burning Rate: | ND |
| Auto Ignition: | ND | | |

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Avoid heat, sparks, flames and other sources of ignition.

Incompatible Products

Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

Hazardous Decomposition Products

Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

Material Name: OATEY ALL PURPOSE CEMENT

* * * **Section 11 - Toxicological Information** * * *

Acute Toxicity

SECTION C

#9

Component Analysis - LD50/LC50

Tetrahydrofuran (109-99-9)

Inhalation LC50 Rat 53.9 mg/L 4 h; Inhalation LC50 Rat 180 mg/L 1 h; Oral LD50 Rat 1650 mg/kg

Cyclohexanone (108-94-1)

Inhalation LC50 Rat 10.7 mg/L 4 h; Inhalation LC50 Rat 8000 ppm 4 h; Oral LD50 Rat 800 mg/kg; Dermal LD50 Rabbit 948 mg/kg

Acetone (67-64-1)

Oral LD50 Rat 5800 mg/kg

Methyl ethyl ketone (78-93-3)

Inhalation LC50 Mouse 32 g/m³ 4 h; Oral LD50 Rat 2737 mg/kg; Dermal LD50 Rabbit 6480 mg/kg

Silica, amorphous, fumed, crystalline-free (112945-52-5)

Oral LD50 Rat 3160 mg/kg

Potential Health Effects: Skin Corrosion Property/Stimulativeness

May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.

Potential Health Effects: Ingestion

Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

Potential Health Effects: Inhalation

Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

Cyclohexanone has been positive in bacterial and mammalian assays. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.

Material Name: OATEY ALL PURPOSE CEMENT

Carcinogenicity

A: General Product Information

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.

B: Component Carcinogenicity

Tetrahydrofuran (109-99-9)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

Cyclohexanone (108-94-1)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

Acetone (67-64-1)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

PVC (Chloroethylene, polymer) (9002-86-2)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Supplement 7 [1987]; Monograph 19 [1979] (Group 3 (not classifiable))

Silica, amorphous, fumed, crystalline-free (112945-52-5)

IARC: Monograph 68 [1997] (listed under Amorphous silica) (Group 3 (not classifiable))

Reproductive Toxicity

Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

Specified Target Organ General Toxicity: Single Exposure

May cause respiratory irritation. Inhalation of high concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ toxicity repeat exposure effects.

Aspiration Respiratory Organs Hazard

Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

***** Section 12 - Ecological Information *****

Ecotoxicity

A: General Product Information

This product is not expected to be toxic to aquatic organisms.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Tetrahydrofuran (109-99-9)

Test & Species

Conditions

Material Name: OATEY ALL PURPOSE CEMENT

| | |
|--------------------------------|----------------------------------|
| 96 Hr LC50 Pimephales promelas | 1970-2360 mg/L [flow-through] |
| 96 Hr LC50 Pimephales promelas | 2700-3600 mg/L [static] |
| 24 Hr EC50 Daphnia magna | 5930 mg/L |

SECTION C**#9****Cyclohexanone (108-94-1)****Test & Species****Conditions**

| | |
|--------------------------------|-----------------------------|
| 96 Hr LC50 Pimephales promelas | 481-578 mg/L [flow-through] |
| 96 Hr LC50 Pimephales promelas | 8.9 mg/L |
| 96 Hr EC50 Chlorella vulgaris | 20 mg/L |
| 24 Hr EC50 Daphnia magna | 800 mg/L |

Acetone (67-64-1)**Test & Species****Conditions**

| | |
|--------------------------------|--------------------------------|
| 96 Hr LC50 Oncorhynchus mykiss | 4.74 - 6.33 mL/L |
| 96 Hr LC50 Pimephales promelas | 6210 - 8120 mg/L [static] |
| 96 Hr LC50 Lepomis macrochirus | 8300 mg/L |
| 48 Hr EC50 Daphnia magna | 10294 - 17704 mg/L [Static] |
| 48 Hr EC50 Daphnia magna | 12600 - 12700 mg/L |

Methyl ethyl ketone (78-93-3)**Test & Species****Conditions**

| | |
|--------------------------------|----------------------------------|
| 96 Hr LC50 Pimephales promelas | 3130-3320 mg/L [flow-through] |
| 48 Hr EC50 Daphnia magna | >520 mg/L |
| 48 Hr EC50 Daphnia magna | 5091 mg/L |
| 48 Hr EC50 Daphnia magna | 4025 - 6440 mg/L [Static] |

Persistence/Degradability

No information available for the product.

Bioaccumulation

No information available for the product.

Mobility in Soil

No information available for the product.

*** * * Section 13 - Disposal Considerations * * *****Waste Disposal Instructions**

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

*** * * Section 14 - Transportation Information * * *****DOT Information**

For Greater than 1 liter (0.3 gal):

Material Name: OATEY ALL PURPOSE CEMENT

Shipping Name: Adhesives

UN #: 1133 Hazard Class: 3 Packing Group: II

Required Label(s): Flammable Liquid

SECTION C

#9

For Less than 1 liter (0.3 gal):

Shipping Name: Consumer Commodity, ORM-D

IMDG Information

For Greater than 1 liter (0.3 gal):

Shipping Name: Adhesives

UN #: 1133 Hazard Class: 3 Packing Group: II

Required Label(s): Flammable Liquid

For Less than 1 liter (0.3 gal):

Shipping Name: Adhesives

UN #: 1133 Hazard Class: 3 Packing Group: II

Required Label(s): None (Limited Quantities are expected from labeling)

*** * * Section 15 - Regulatory Information * * ***

Regulatory Information

US Federal Regulations

Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Tetrahydrofuran (109-99-9)

CERCLA: 1000 lb final RQ; 454 kg final RQ

Cyclohexanone (108-94-1)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

Acetone (67-64-1)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

Methyl ethyl ketone (78-93-3)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

State Regulations

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

| Component | CAS | CA | MA | MN | NJ | PA | RI |
|-------------------------------|-----------|-----|-----|-----|-----|-----|----|
| Tetrahydrofuran | 109-99-9 | Yes | Yes | Yes | Yes | Yes | No |
| Cyclohexanone | 108-94-1 | Yes | Yes | Yes | Yes | Yes | No |
| Acetone | 67-64-1 | Yes | Yes | Yes | Yes | Yes | No |
| Methyl ethyl ketone | 78-93-3 | Yes | Yes | Yes | Yes | Yes | No |
| PVC (Chloroethylene, polymer) | 9002-86-2 | No | No | No | Yes | No | No |

Material Name: OATEY ALL PURPOSE CEMENT

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List.

| Component | CAS # | Minimum Concentration |
|---------------------|----------|-----------------------|
| Tetrahydrofuran | 109-99-9 | 1 % |
| Cyclohexanone | 108-94-1 | 0.1 % |
| Acetone | 67-64-1 | 1 % |
| Methyl ethyl ketone | 78-93-3 | 1 % |

SECTION C

#9

Additional Regulatory Information

A: General Product Information

This product contains trace amounts of chemicals known to the State of California to cause cancer. Under normal use conditions, exposure to these chemicals at levels above the State of California "No Significant Risk Level" (NSRL) are unlikely. The use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 will minimize exposure to these chemicals.

B: Component Analysis - Inventory

| Component | CAS # | TSCA | CAN | EEC |
|--|-------------|------|-----|--------|
| Tetrahydrofuran | 109-99-9 | Yes | DSL | EINECS |
| Cyclohexanone | 108-94-1 | Yes | DSL | EINECS |
| Acetone | 67-64-1 | Yes | DSL | EINECS |
| Methyl ethyl ketone | 78-93-3 | Yes | DSL | EINECS |
| PVC (Chloroethylene, polymer) | 9002-86-2 | Yes | DSL | ELINCS |
| Ethene, chloro-, homopolymer, chlorinated | 68648-82-8 | Yes | DSL | No |
| Silica, amorphous, fumed, crystalline-free | 112945-52-5 | No | DSL | No |

* * * Section 16 - Other Information * * *

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

Literature References

None

Other Information

NFPA and HMIS:

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None

HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, we cannot give any guarantees regarding information from other sources, and expressly do not make warranties, nor assume any liability for its use.

End of Sheet

Thread Sealant, Oils, Lube's

Section D

Contents:

1. WHITE PIPE COMPOUND

2. #5 PASTE

3. LEAK DETECTOR

4. CLEAR CUTTING OIL

5. DARK CUTTING OIL

Section D





GHS SAFETY DATA SHEET

WELD-ON® White Seal Plus Pipe Joint Compound

Date Revised: DEC 2011

Supersedes: AUG 2011

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WELD-ON® White Seal Plus Pipe Joint Compound**PRODUCT USE:** Pipe Thread Sealant**SUPPLIER:****MANUFACTURER:** IPS Corporation
17109 South Main Street, Carson, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300**EMERGENCY:** Transportation: CHEMTEL Tel. 800.255-3924, 813-248-0585 (International) Medical: Tel. 800.451.8346, 760.602.8703 3E Company (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

| Health | Environmental | Physical |
|--|--|------------|
| Acute Toxicity: None Known Skin Irritation: Category 3 Skin Sensitization: None Known Eye: Category 2 | Acute Toxicity: None Known Chronic Toxicity: None Known | None Known |

Section D

GHS LABEL:

OR

**Signal Word:**
Warning**WHMIS CLASSIFICATION:**
Not Regulated

#1

Hazard Statements

H317: May cause an allergic skin reaction

Precautionary Statements

P262: Do not get in eyes, on skin, or on clothing
P233: Keep container tightly closed P271: Use only outdoors or in a well-ventilated area

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

| | CAS# | EINECS # | REACH Pre-registration Number | CONCENTRATION % by Weight |
|------------------------------------|-------------|---------------|----------------------------------|------------------------------|
| Hydrotreated Paraffinic Distillate | 64742-55-8 | 265-158-7 | | 15 - 45 |
| Highly Refined mineral oil | 64742-65-0 | 265-169-7 | | 2 - 10 |
| Calcined Diatomaceous Earth | 68855-54-9 | 272-489-0 | | 10 - 30 |
| Silicate | 12001-26-2 | 215-479-3 | | 8 - 18 |
| Polyethylene Homopolymer | 9002-88-4 | 200-815-3 | | 0.50 - 4 |
| Silicon Dioxide, Synthetic | 112945-52-2 | 231-545-4 | | 1 - 7 |
| Magnesium Silicate | 14807-86-6 | not available | | 8 - 18 |
| Titanium Dioxide | 13463-67-7 | 215-280-1 | | 8 - 16 |
| Borosilicate sphere | 65997-17-3 | 266-046-0 | | 8 - 16 |
| Polytetrafluoroethylene | 9002-84-0 | 204-126-9 | | 8 - 16 |

No hazardous ingredients as defined by OSHA Hazard Communication Standard 29 CFR 1910.1200

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

*Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes. If irritation develops, seek medical advice.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Carbon dioxide, foam or dry chemical
Unsuitable Extinguishing Media: None known
Exposure Hazards: Irritating organic vapors
Combustion Products: No information available

| | | | |
|--------------|-------------|-------------|------------|
| | HMIS | NFPA | |
| Health | 1 | 1 | 0-Minimal |
| Flammability | 1 | 1 | 1-Slight |
| Reactivity | 0 | 0 | 2-Moderate |
| PPE | B | | 3-Serious |
| | | | 4-Severe |

Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure air-supply masks

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Prevent contact with skin or eyes (see section 8).
Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up: Soak up with inert absorbent material. Store in a partly filled, closed container until disposal.

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid avoid contact with eyes, skin and clothing.
Do not eat, drink or smoke while handling.
Storage: Store below 54°C (130°F) to preserve shelf life. Keep container tightly closed when not in use.
Follow all precautionary information on container label and product bulletins.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

| EXPOSURE LIMITS: | Component | ACGIH TLV | ACGIH STEL | OSHA PEL | OSHA STEL: |
|------------------|----------------------------|--------------|------------|--------------|------------|
| | Hydrotreated Paraffinic | 5 mg/m 8 hrs | | 2 mg/m 8 hrs | |
| | Highly Refined mineral oil | None listed | | None listed | |
| | Calcined Diatomaceous | None listed | | None listed | |
| | Silicate | 3 mg/m3 | | 20 mppcf | |
| | Polyethylene Homopolymer | 10 mg/m3 | | 15 mg/m3 | |
| | Silicon Dioxide, Synthetic | 10 mg/m3 | | .8 mg/m3 | |
| | Magnesium Silicate | 2 mg/m3 | | 30 mppcf | |
| | Titanium Dioxide | 10 mg/m3 | | 15 mg/m3 | |
| | Borosilicate sphere | None listed | | None listed | |
| | Polytetrafluoroethylene | None listed | | None listed | |

Engineering Controls: Use local exhaust as needed.**Monitoring:** Maintain breathing zone airborne concentrations below exposure limits.**Personal Protective Equipment (PPE):****Eye Protection:** Avoid contact with eyes, wear splashproof chemical goggles.**Skin Protection:** Prevent contact with the skin as much as possible. Chemical resistant gloves should be used for frequent immersion.
Use of rubber or plastic gloves should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.**Respiratory Protection:** None needed for normal use



GHS SAFETY DATA SHEET

WELD-ON® White Seal Plus Pipe Joint Compound

Date Revised: DEC 2011

Supersedes: AUG 2011

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------|---------------------|----------------------|------------------------|
| Appearance: | White paste | Evaporation Rate: | N/A |
| Odor: | None | Flammability: | None Known |
| pH: | Not Applicable | Flammability Limits: | LEL: Not Established |
| Boiling Point: | Not Applicable | | UEL: Not Established |
| Flash Point: | >232°C (450°F) | Vapor Pressure: | < 10mm @ 26.6°C (80°F) |
| Specific Gravity: | 1.28 @26.6°C (80°F) | Vapor Density: | N/A |
| Solubility: | Negligible | VOC Content: | 0% |
| Auto-ignition Temperature: | Not Available | | |
| Decomposition Temperature: | Not Available | | |

SECTION 10 - STABILITY AND REACTIVITY

| | |
|-----------------------------------|--------------------|
| Stability: | Stable |
| Hazardous decomposition products: | None (non-thermal) |
| Conditions to avoid: | None Known |
| Incompatible Materials: | Base materials |

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Eye and Skin Contact

Acute symptoms and effects:

| | |
|---------------|---------------------------|
| Inhalation: | None Known |
| Eye Contact: | May cause eye irritation |
| Skin Contact: | May cause skin irritation |
| Ingestion: | None Known |

Toxicity: Chronic (long-term) effects

LD₅₀

LC₅₀

| | | |
|--------------------------------|--|-----------------------|
| Hydrotreated Paraffinic | | |
| Highly Refined mineral oil | | |
| Calcined Diatomaceous Silicate | | |
| Polyethylene Homopolymer | >2000 mg/kg (Ora, rat) | |
| Silicon Dioxide, Synthetic | >5000 mg/kg (Oral, rat/Dermal, rabbit) | 0.139 mg/l (Rat, 4hr) |
| Magnesium Silicate | >10000 mg/kg (Oral rat, Dermal rabbit) | |
| Titanium Dioxide | IARC 2B | |
| Borosilicate spere | | |
| Polytetrafluoroethylene | | 3500 mg/m3 at 626°C |

| | | | | | |
|-----------------------------|-----------------------|---------------------|-----------------------|---------------------------------|-----------------------------|
| Reproductive Effects | Teratogenicity | Mutagenicity | Embryotoxicity | Sensitization to Product | Synergistic Products |
| Not Established | Not Established | Not Established | Not Established | Not Established | Not Established |

SECTION 12 - ECOLOGICAL INFORMATION

| | |
|------------------|-----------------|
| Ecotoxicity: | None Known |
| Mobility: | Not Established |
| Degradability: | Not Established |
| Bioaccumulation: | Not Established |

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Incinerate in accordance with local and national regulations. Consult local disposal expert.

SECTION 14 - TRANSPORT INFORMATION

| | |
|------------------------|---------------------------------------|
| Proper Shipping Name: | None |
| Hazard Class: | Not Regulated as a hazardous material |
| Secondary Risk: | None |
| Identification Number: | None |
| Packing Group: | None |
| Label Required: | None |
| Marine Pollutant: | NO |

TDG INFORMATION

| | |
|--------------------------|---------------|
| TDG CLASS: | Not Regulated |
| SHIPPING NAME: | Not Regulated |
| UN NUMBER/PACKING GROUP: | Not Regulated |

SECTION 15 - REGULATORY INFORMATION

| | | | |
|----------------------------------|---|---|--|
| Precautionary Label Information: | Irritant | Ingredient Listings: | USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS) |
| Symbols: | Xi | | |
| Risk Phrases: | R-36/38 Irritating to eyes and skin. | | |
| Safety Phrases: | S-2/3 Keep in a cool place, out of reach of children. S-7 Keep container tightly closed when not in use. S-24/25 Avoid contact with skin and eyes. S-35 Dispose of material and container in a safe way. | S-29 Do not empty into drains, storm drains or watercourses. S-37/39 Wear suitable gloves and eye protection. S-45 If seeking medical advice show physician label or SDS. S-51 Use only in well ventilated areas | |

SECTION 16 - OTHER INFORMATION

| | | |
|------------------------------------|--|--|
| Specification Information: | | |
| Department issuing data sheet: | IPS, Safety Health & Environmental Affairs | All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances). |
| E-mail address: | <EHSinfo@ipscorp.com> | |
| Training necessary: | Yes, training in practices and procedures contained in product literature. | |
| Reissue date / reason for reissue: | 12/14/2011 / Updated GHS Standard Format | |
| Intended Use of Product: | Pipe Thread Sealant | |

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

Section D

#1



Section D

MATERIAL SAFETY DATA SHEET

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

Trade Name: OATEY #5 PASTE FLUX
 Product Use: Flux for soldering.
 Formula: See Section 2
 Synonyms: Flux for Soldering Copper Pipe
 Firm Name & Mailing Address: OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. <http://www.oatey.com>
 Oatey Phone Number: (216) 267-7100 or (800) 321-9532
 Emergency Phone Numbers: For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
 Prepared By: Corporate Director - Safety and Environmental Compliance
 Preparation Date: July 15, 2005

Section D

#2

SECTION 2

COMPOSITION/INFORMATION ON INGREDIENTS

| INGREDIENTS: | % wt/wt: | CAS NUMBER: | ACGIH TLV TWA: | OSHA PEL TWA: |
|-------------------|-----------|-------------|----------------------------------|-----------------------|
| Petrolatum | 60 - 100% | 8009-03-8 | 5 mg/m3 (oil mist) | 5 mg/m3 (oil mist) |
| Zinc Chloride | 10 - 30% | 7646-85-7 | 1 mg/m3 (fume) 2 mg/m3 STEL | 1 mg/m3 (fume) |
| Ammonium Chloride | 1 - 5% | 12125-02-9 | 10 mg/m3 (fume) 20 mg/m3 STEL | None Established |

SECTION 3

HAZARDS IDENTIFICATION

Emergency Overview:

Yellow paste with a slight odor. May cause burns to the eye and skin. Inhalation of fumes may cause respiratory irritation, metal fume fever, chills, nausea and vomiting. Swallowing may cause burns to the mouth or throat, vomiting, diarrhea and kidney or liver disorders. May be harmful if swallowed. Symptoms may be delayed.

OSHA Hazard Classification: Corrosive, target organ effects

SECTION 4

FIRST AID MEASURES

CALL 1-303-623-5716 COLLECT

Skin: Remove contaminated clothing. Wash thoroughly with soap and water. Call a physician or poison control center if irritation persists.

Eyes: Remove contact lenses if any. Rinse eyes with water for 15 minutes. Get immediate medical attention.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Keep victim quiet and warm. Call a poison control center or physician immediately.

Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

SECTION 5 FIRE FIGHTING MEASURES

Flashpoint / Method: 540 Degrees F (282 Degrees C)
Flammability: LEL = Not determined, UEL = Not determined
Extinguishing: Small Fires: Use dry chemical, CO2, water, or foam extinguisher
Media: Large Fires: Evacuate area and call Fire Department immediately
Special Fire: Firefighters should wear positive pressure self-contained
Fighting: breathing apparatus and full protective clothing for fires in
Procedure: areas where chemicals are used or stored
Unusual Fire and: None known.
Explosion
Hazards:
Hazardous: Hydrocarbons, hydrogen chloride, zinc fumes, ammonia, smoke,
Decomposition: carbon monoxide, carbon dioxide and nitrogen oxides.
Products:

Section D

#2

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill or: Ventilate area. Stop leak if it can be done without risk. Personnel
Leak: cleaning up the spill should wear appropriate personal protective
Procedures: equipment. Take up spill with sand, earth or other absorbent material
and place into a clean, dry leak-proof container.

SECTION 7 HANDLING AND STORAGE

Handling: Do not get in eyes. Do not get on skin or clothing. Do not take
internally. Avoid breathing vapors or fumes. Use only with adequate
ventilation. Wash thoroughly after handling. Keep container closed when
not in use. Handle with care. Keep out of reach of children.
Storage: Store in original, labeled container.
Other: Containers, even empty will retain residue and may be harmful.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Good general ventilation (equivalent to outdoors) should be adequate
for normal use. For operations where the TLV may be exceeded,
mechanical ventilation such as local exhaust may be needed to maintain
exposure levels below applicable limits.
Respiratory: For operations where the TLV may be exceeded, a NIOSH approved
Protection: particulate respirator or supplied air respirator is recommended.
Equipment selection depends on contaminant type and concentration,
select in accordance with 29 CFR 1910.134 and good industrial hygiene
practice. For firefighting, use self-contained breathing apparatus.
Skin: Wear rubber gloves.
Protection:
Eye: Safety glasses with sideshields or safety goggles.
Protection:
Other: Eye wash and safety shower should be available.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 638 Degrees F (337 Degrees C)
Melting Point: Not determined
Vapor Pressure: Not determined
Vapor Density: (Air = 1) Greater than 1
Volatile Components: 7-10%
Solubility In Water: Negligible
pH: Not applicable
Specific Gravity: 1.1
Evaporation Rate: Not applicable
Appearance: Yellow Paste
Odor: Very little odor
Will Dissolve In: Methylene Chloride
Material Is: Paste

Section D

#2

SECTION 10 STABILITY AND REACTIVITY

Stability: Stable.
Conditions To Avoid: None.
Hazardous: Hydrocarbons, hydrogen chloride, zinc fumes, ammonia, smoke,
Decomposition: smoke, carbon monoxide, carbon dioxide and nitrogen oxides.
Products:
Incompatibility/ Strong oxidizing agents, potassium, cyanides and sulfides.
Materials To Avoid:
Hazardous: Will not occur.
Polymerization:

SECTION 11 TOXICOLOGICAL INFORMATION

Inhalation: Fumes from heated product may be corrosive to mucous membranes and the respiratory system. Fumes may cause burning sensation, coughing, wheezing, shortness of breath, cyanosis, fever, chills, muscular pain, anemia, metallic taste in the mouth, headache, nausea, vomiting, sweating, diarrhea and pulmonary edema. Fumes may cause stannosis, a mild benign pneumoconiosis. Repeated inhalation of fumes may cause occupational asthma. Symptoms may be delayed.
Skin: Contact may cause irritation, ulcerations, burns or dermatitis. Symptoms may be delayed.
Eye: Vapors or fumes may cause redness, pain, blurred vision and corneal damage. Direct contact may cause burns and eye damage with possible blindness. Symptoms may be delayed.
Ingestion: May cause irritation or burns to the mouth and throat, nausea, vomiting or diarrhea. Death may occur from strictures of the esophagus and pylorus. Symptoms may be delayed.
Toxicity Data: Petrolatum: No data available
Zinc Chloride: Oral rat LD50: 350 mg/kg
Ammonium Chloride: Oral rat LD50: 1,650 mg/kg
Sensitization: None of the components are known to cause sensitization.
Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA.
Mutagenicity: None of the components have been found to be mutagenic.
Reproductive Toxicity: None of the components are known to cause adverse reproductive effects.
Medical Conditions: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.
Aggravated By
Exposure:

SECTION 12 ECOLOGICAL INFORMATION
No data available.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose of in accordance with federal, state, and local regulations.
It is the responsibility of the end-user to determine at the time of disposal of the product.

RCRA Hazardous Waste Number: None
EPA Hazardous Waste ID Number: None
EPA Hazard Waste Class: None

Section D

#2

SECTION 14 TRANSPORT INFORMATION

DOT

Proper Shipping Name: Zinc Chloride Mixture
Hazard Class/Packing Group: 8, PG III
UN/NA Number: UN1840
Hazard Labels: Non-Corrosive

IMDG

Proper Shipping Name: Zinc Chloride Mixture
Hazard Class/Packing Group: 8, PG III
UN Number: UN1840
Label: Non-Corrosive

2004 North American Emergency Response Guidebook Number: 153 or 154

SECTION 15 REGULATORY INFORMATION

Hazard Category for Section 311/312: Acute Health, Chronic Health

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.
Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

| <u>Chemical</u> | <u>CAS #</u> | <u>% wt</u> |
|-----------------|--------------|-------------|
| Zinc Chloride | 7646-85-7 | 10-30% |

CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Zinc Chloride (30% max) of 1,000 lbs, is 3,300 lbs.

| <u>Chemical</u> | <u>CAS #</u> | <u>RQ, lbs.</u> |
|-------------------|--------------|-----------------|
| Zinc Chloride | 7646-85-7 | 1,000 |
| Ammonium Chloride | 12125-02-6 | 5,000 |

California Proposition 65: Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

TSCA Inventory: This product does not contain chemicals regulated under California Proposition 65.

Canadian WHMIS Classification: All of the components of this product are listed on the TSCA inventory.

Class E; Class D, Division 2, Subdivision B
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

MSDS No: SOL235E5
Issue Date: 15 July 2005
Page: 5 of 5

SECTION 16 OTHER INFORMATION

NFPA and HMIS:

NFPA Hazard Signal: Health: 3 Flammability: 1 Reactivity: 0 Special: None

HMIS Hazard Signal: Health: 3* Flammability: 1 Reactivity: 0 PPE: B

Disclaimer:

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Section D

#2



Section D

MATERIAL SAFETY DATA SHEET

Section D
#3

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

Trade Name: OATEY ALL PURPOSE LEAK DETECTOR
Product Use: Detecting leaks in systems under gas pressure.
Formula: See Section 2.
Synonyms: Leak detector.
Firm Name & Mailing Address: OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. <http://www.oatey.com>
Oatey Phone Number: (216) 267-7100
Emergency Phone Numbers: For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300
Prepared By: Corporate Director - Safety and Environmental Compliance
Preparation Date: June 10, 2005

SECTION 2

COMPOSITION/INFORMATION ON INGREDIENTS

| INGREDIENTS: | %wt/wt: | CAS NUMBER: | ACGIH TLV TWA: | OSHA PEL TWA: | OTHER: |
|-----------------|----------|-------------|----------------|---------------|--------|
| Ethylene Glycol | 40 - 70% | 107-21-1 | 100 mg/m3 (c) | None | None |
| Water | 30 - 60% | 7732-18-5 | None | None | None |

(c) = Ceiling

OSHA Hazard Classification: Harmful if swallowed. Organ effects.

SECTION 3

HAZARDS IDENTIFICATION

Emergency Overview:
Ice blue liquid, which may cause eye, skin, and respiratory tract irritant.
Ingestion can cause CNS and kidney effects and possibly death.

SECTION 4

FIRST AID MEASURES

CALL 1-303-623-5716 COLLECT

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops.

Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

Inhalation: If respiratory irritation develops, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

Ingestion: If swallowed, immediately give 2 glasses of water and induce vomiting. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

SECTION 5 FIRE FIGHTING MEASURES

Flashpoint / Method: Not applicable.
Flammability: LEL = Not Applicable, UEL = Not applicable
Extinguishing: Not applicable.
Media:
Special Fire Fighting: None.
Procedure:
Unusual Fire and Explosion: None
Hazards:
Hazardous: Combustion, after water is boiled off, will produce oxides
Decomposition: of carbon.
Products:

Section D
#3

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill or Leak: See Section 8 for required personal protective equipment. Contain spill, stop source of leak, pump spilled material into salvage container, soak up remaining material with absorbent such as sand or clay. Prevent product from entering potable or natural water systems.
Procedures: Determine if reporting is required under CERCLA.

SECTION 7 HANDLING AND STORAGE

Handling: Avoid prolonged and repeated skin contact. Launder contaminated clothing before reuse.
Storage: Store away from direct heat source and strong oxidizing agents.
Other: Do not pressurize, cut, weld, braze, drill, grind or heat empty containers as some flammable, hazardous or combustible residue may be present. Avoid breathing mist. For industrial use only.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Recommended to maintain mist below TLV limit.
Respiratory Protection: For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice.
Skin Protection: Oil/Chemical resistant gloves to minimize skin contact.
Eye Protection: Goggles or face shield if contact is expected.
Other: Eye wash and safety shower should be available.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 238 °F / 114 °C
Melting Point: Not determined
Vapor Pressure: Not determined
Vapor Density: 1.14 (Air = 1)
Volatile Components: Nil.
Solubility In Water: 100%
pH: Not determined
Specific Gravity: 1.039
Evaporation Rate: 3.4
Appearance: Ice blue liquid.
Odor: Soapy fragrance.
Will Dissolve In: Water
Material Is: Liquid

Section D

#3

SECTION 10 STABILITY AND REACTIVITY

Stability: Stable.
Conditions To Avoid: None.
Hazardous
Decomposition: Oxides of carbon.
Products:
Incompatibility/ None.
Materials To Avoid:
Hazardous: Will not occur.
Polymerization:

SECTION 11 TOXICOLOGICAL INFORMATION

Inhalation: Excessive exposure to mist may irritate respiratory tract.
Skin: May cause irritation. Skin absorption may occur in amounts capable of producing toxic effects.
Eye: May cause irritation, redness and itching.
Ingestion: May cause central nervous system depression, vomiting, drowsiness ataxia, slurred speech and renal damage. Convulsions, coma and death may result from ingestion of large quantities.
Chronic: Prolonged continued skin contact may cause dermatitis, mist may
Toxicity: irritate respiratory tract.
Toxicity Data: Ethylene glycol: Oral LD₅₀ (rat) 5,000 to 13,000 mg/kg.
Sensitization: None of the components are known to cause sensitization.
Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA.
Mutagenicity: None known
Reproductive: None anticipated based on product formula. Ethylene glycol may
Toxicity: cause birth defects based on tests with laboratory animals.
Medical
Conditions
Aggravated By
Exposure: None known.

SECTION 12 ECOLOGICAL INFORMATION

VOC
Information: Unknown
VOC Level: Unknown

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.
RCRA Hazardous Waste Number: Not applicable
EPA Hazardous Waste ID Number: Not applicable
EPA Hazard Waste Class: None

SECTION 14 TRANSPORTATION INFORMATION

DOT
Proper Shipping Name: Not applicable
Hazard Class/Packing Group: Not applicable
UN/NA Number: Not applicable
Hazard Labels: Not applicable
IMDG
Proper Shipping Name: Not applicable
Hazard Class/Packing Group: Not applicable
UN Number: Not applicable
Label: Not applicable

SECTION 15 REGULATORY INFORMATION

Hazard Category for Section 311/312: Acute and chronic health hazards

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: 40 - 60% ethylene glycol.

CERCLA 103 Reportable: 5,000 lbs. (ethylene glycol).

California Proposition 65: This product does not contain any chemicals subject To California Proposition 65 regulation.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

Canadian WHMIS Classification: D-2A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16 OTHER INFORMATION

NFPA and HMIS:

NFPA Hazard Signal: Health: 1 Flammability: 1 Reactivity: 0 Special: None

HMIS Hazard Signal: Health: 1* Flammability: 1 Reactivity: 0 PPE: B

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Section D
#3



Section D

MATERIAL SAFETY DATA SHEET

Section D
#4

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

Trade Name: OATEY CLEAR THREAD CUTTING OIL
Product Use: Oil for pipe cutting and threading
Formula: Petroleum Distillates mixture
Synonyms: Thread cutting oil
Firm Name & Mailing Address: OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. <http://www.oatey.com>
Oatey Phone Number: (216) 267-7100 or (800) 321-9532
Emergency Phone Numbers: For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
Prepared By: Corporate Director - Safety and Environmental Compliance
Preparation Date: July 27, 2005

SECTION 2

COMPOSITION/INFORMATION ON INGREDIENTS

| <u>INGREDIENTS:</u> | <u>%wt/wt:</u> | <u>CAS NUMBER:</u> | <u>ACGIH TLV TWA:</u> | <u>OSHA PEL TWA:</u> | <u>OTHER:</u> |
|-----------------------|----------------|--------------------|-----------------------|----------------------|------------------|
| Petroleum distillates | 75%, max. | 64741-88-4 | 5mg/m3 | 5mg/m3 | STEL: 10mg/m3 |
| Petroleum distillates | 25%, max. | 69029-75-0 | 5mg/m3 | 5mg/m3 | STEL: 10mg/m3 |
| Sulfur additive | 2%, max. | 68515-88-8 | None | None | None |
| Chlorinated paraffin | < 1% | 63449-39-8 | None | None | None |

OSHA Hazard Classification: Irritant.

SECTION 3

HAZARDS IDENTIFICATION

Emergency Overview:
Transparent amber fluid. Mild eye, skin, inhalation and ingestion irritant.

SECTION 4

FIRST AID MEASURES

CALL 1-303-623-5716 COLLECT

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops.
Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.
Inhalation: If respiratory irritation develops, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.
Ingestion: **DO NOT INDUCE VOMITING.** Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

SECTION 5 FIRE FIGHTING MEASURES

Flashpoint / Method: > 300 Degrees F (149 Degrees C) / C.O.C.
Flammability: LEL = Not available, UEL = Not available
Extinguishing: Use dry chemical, CO2, or foam to extinguish fire. Do not use water as it may be ineffective as an extinguishing agent.
Media:
Special Fire: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for areas where chemicals are used or stored
Fighting:
Procedure:
Unusual Fire and Explosion:
Hazards: None
Hazardous Decomposition:
Products: Combustion will produce toxic and irritating vapors including oxides of carbon, phosphorus, sulfur, smoke, hydrogen chloride, and hydrogen sulfide.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill or Leak: Remove all sources of ignition and ventilate area. Contain spill, stop source of leak, pump spilled material into salvage container, soak up remaining material with absorbent such as sand or clay. Prevent product from entering potable or natural water systems. Put absorbent material in covered, labeled metal containers. Report releases to authorities as required. See Section 13 for disposal information.
Procedures:

SECTION 7 HANDLING AND STORAGE

Handling: Avoid prolonged and repeated skin contact. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use. Launder contaminated clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible materials. Store away from direct heat source and strong oxidizing agents. Keep containers closed when not in use.
Other: Do not pressurize, cut, weld, braze, drill, grind or heat empty containers as some flammable, hazardous or combustible residue may be present. Avoid breathing mist. For industrial use only.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: General mechanical ventilation is usually adequate under normal conditions of use. Use local ventilation if necessary to maintain oil mist below PEL/TLV
Respiratory Protection: For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice.
Skin Protection: Oil/Chemical resistant gloves such as neoprene or nitrile.
Eye Protection: Safety glasses with side shields or chemical splash goggles if necessary.

SECTION 8: Continued

Other: Eye wash and safety shower should be available. Other such as protective apron as necessary to prevent prolonged skin contact.

Section D

#4

SECTION 9 **PHYSICAL AND CHEMICAL PROPERTIES**
Boiling Point: > 500 Degrees F / 260 Degrees C
Melting Point: Not applicable
Vapor Pressure: < 0.1 mm Hg at 20 degrees C
Vapor Density: > 1.0 (Air = 1.0)
Volatile Components: Negligible
Solubility In Water: Negligible
pH: Not applicable
Specific Gravity: 0.90 - 0.95 (Water = 1.0)
Evaporation Rate: Negligible (BUAC = 1.0)
Appearance: Transparent amber oily fluid
Odor: Mild petroleum
Will Dissolve In: Oil and organic solvents
Material Is: Liquid

SECTION 10 **STABILITY AND REACTIVITY**
Stability: Stable.
Conditions To Avoid: Avoid heat, sparks, flames and other sources of ignition.
Hazardous
Decomposition
Products: Combustion will produce toxic and irritating vapors including oxides of carbon, phosphorus, sulfur, smoke, hydrogen chloride, and hydrogen sulfide.

Incompatibility/
Materials To Avoid: Avoid contact with strong oxidizers.
Hazardous Will not occur.
Polymerization:

SECTION 11 **TOXICOLOGICAL INFORMATION**
Inhalation: Excessive exposure to mist may irritate respiratory tract.
Skin: May cause irritation.
Eye: May cause irritation.
Ingestion: May irritate gastrointestinal tract.
Chronic Prolonged continued skin contact may cause dermatitis, mist may
Toxicity: irritate respiratory tract.
Toxicity Data: Not available
Sensitization: None of the components are known to cause sensitization.
Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA.

Mutagenicity: Not available
Reproductive
Toxicity: Not available
Medical
Conditions
Aggravated By
Exposure: Persons with pre-existing skin or lung disorders may be at increased risk from exposure to this product.

SECTION 12 ECOLOGICAL INFORMATION

VOC

Information: None

VOC Level: Not established

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.

RCRA Hazardous Waste Number: Not applicable

EPA Hazardous Waste ID Number: Not applicable

EPA Hazard Waste Class: Not applicable

SECTION 14 TRANSPORT INFORMATION

DOT

Proper Shipping Name: Not applicable

Hazard Class/Packing Group: Not applicable

UN/NA Number: Not applicable

Hazard Labels: Not applicable

IMDG

Proper Shipping Name: Not applicable

Hazard Class/Packing Group: Not applicable

UN Number: Not applicable

Label: Not applicable

2004 North American Emergency Response Guidebook Number: None

SECTION 15 REGULATORY INFORMATION

Hazard Category for Section 311/312: None

311/312:

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product contains no chemicals subject to SARA Title III Section 313 Reporting requirements.

CERCLA 103 Reportable: None

California Proposition 65: This product is not known to contain any chemicals subject to California Proposition 65 regulation.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

Canadian WHMIS Classification: D2B. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16 OTHER INFORMATION

NFPA and HMIS:

NFPA Hazard Signal: Health: 1 Flammability: 1 Reactivity: 0 Special: None

HMIS Hazard Signal: Health: 1 Flammability: 1 Reactivity: 0 PPE: B

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Section D

MATERIAL SAFETY DATA SHEET

Section D

#5

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

Trade Name: OATEY DARK THREAD CUTTING OIL
Product Use: Oil for pipe cutting and threading
Formula: Petroleum Distillates mixture
Synonyms: Thread cutting oil
Firm Name & Mailing Address: OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. <http://www.oatey.com>
Oatey Phone Number: (216) 267-7100 or (800) 321-9532
Emergency Phone Numbers: For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
Prepared By: Corporate Director - Safety and Environmental Compliance
Preparation Date: July 27, 2005

SECTION 2

COMPOSITION/INFORMATION ON INGREDIENTS

| <u>INGREDIENTS:</u> | <u>%wt/wt:</u> | <u>CAS NUMBER:</u> | <u>ACGIH TLV TWA:</u> | <u>OSHA PEL TWA:</u> | <u>OTHER:</u> |
|-----------------------|----------------|--------------------|-----------------------|----------------------|------------------|
| Petroleum distillates | 90%, max. | 69029-75-0 | 5mg/m3 | 5mg/m3 | STEL: 10mg/m3 |
| Petroleum distillates | 25%, max. | 69029-75-0 | 5mg/m3 | 5mg/m3 | STEL: 10mg/m3 |
| Sulfur additive | 10%, max. | 68153-70-8 | None | None | None |
| Chlorinated paraffin | 5%, max. | 63449-39-8 | None | None | None |

OSHA Hazard Classification: Irritant.

SECTION 3

HAZARDS IDENTIFICATION

Emergency Overview:
Transparent dark amber fluid. Mild eye, skin, inhalation and ingestion irritant.

SECTION 4

FIRST AID MEASURES

CALL 1-303-623-5716 COLLECT

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops.
Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.
Inhalation: If respiratory irritation develops, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.
Ingestion: **DO NOT INDUCE VOMITING.** Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

SECTION 5 FIRE FIGHTING MEASURES

Flashpoint / Method: > 300 Degrees F (149 Degrees C) / C.O.C.
Flammability: LEL = Not available, UEL = Not available
Extinguishing: Use dry chemical, CO2, or foam to extinguish fire. Do not use water as it may be ineffective as an extinguishing agent.
Media:
Special Fire: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for areas where chemicals are used or stored
Fighting:
Procedure:
Unusual Fire and Explosion:
Hazards: None
Hazardous Decomposition:
Products: Combustion will produce toxic and irritating vapors including oxides of carbon, phosphorus, sulfur, smoke, hydrogen chloride, and hydrogen sulfide.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill or Leak: Remove all sources of ignition and ventilate area. Contain spill, stop source of leak, pump spilled material into salvage container, soak up remaining material with absorbent such as sand or clay. Prevent product from entering potable or natural water systems. Put absorbent material in covered, labeled metal containers. Report releases to authorities as required. See Section 13 for disposal information.
Procedures:

SECTION 7 HANDLING AND STORAGE

Handling: Avoid prolonged and repeated skin contact. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use. Launder contaminated clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible materials. Store away from direct heat source and strong oxidizing agents. Keep containers closed when not in use.
Other: Do not pressurize, cut, weld, braze, drill, grind or heat empty containers as some flammable, hazardous or combustible residue may be present. Avoid breathing mist. For industrial use only.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: General mechanical ventilation is usually adequate under normal conditions of use. Use local ventilation if necessary to maintain oil mist below PEL/TLV.
Respiratory Protection: For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice.
Skin Protection: Oil/Chemical resistant gloves such as neoprene or nitrile.
Eye Protection: Safety glasses with side shields or chemical splash goggles if necessary.

SECTION 8: Continued

Other: Eye wash and safety shower should be available. Other such as protective apron as necessary to prevent prolonged skin contact.

SECTION 9 **PHYSICAL AND CHEMICAL PROPERTIES**
Boiling Point: > 500 Degrees F / 260 Degrees C
Melting Point: Not applicable
Vapor Pressure: < 0.1 mm Hg at 20 degrees C
Vapor Density: > 1.0 (Air = 1.0)
Volatile Components: Negligible
Solubility In Water: Negligible
pH: Not applicable
Specific Gravity: 0.90 - 0.95 (Water = 1.0)
Evaporation Rate: Negligible (BUAC = 1.0)
Appearance: Transparent dark amber oily fluid
Odor: Mild petroleum
Will Dissolve In: Oil and organic solvents
Material Is: Liquid

Section D

#5

SECTION 10 **STABILITY AND REACTIVITY**
Stability: Stable.
Conditions To Avoid: Avoid heat, sparks, flames and other sources of ignition.
Hazardous
Decomposition
Products: Combustion will produce toxic and irritating vapors including oxides of carbon, phosphorus, sulfur, smoke, hydrogen chloride, and hydrogen sulfide.

Incompatibility/
Materials To Avoid: Avoid contact with strong oxidizers.
Hazardous Will not occur.
Polymerization:

SECTION 11 **TOXICOLOGICAL INFORMATION**
Inhalation: Excessive exposure to mist may irritate respiratory tract.
Skin: May cause irritation.
Eye: May cause irritation.
Ingestion: May irritate gastrointestinal tract.
Chronic Prolonged continued skin contact may cause dermatitis, mist may
Toxicity: irritate respiratory tract.
Toxicity Data: Not available
Sensitization: None of the components are known to cause sensitization.
Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA.

Mutagenicity: Not available
Reproductive
Toxicity: Not available
Medical
Conditions
Aggravated By
Exposure: Persons with pre-existing skin or lung disorders may be at increased risk from exposure to this product.

SECTION 12 ECOLOGICAL INFORMATION

VOC

Information: None

VOC Level: Not established

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.

RCRA Hazardous Waste Number: Not applicable

EPA Hazardous Waste ID Number: Not applicable

EPA Hazard Waste Class: Not applicable

Section D

#5

SECTION 14 TRANSPORT INFORMATION

DOT

Proper Shipping Name: Not applicable

Hazard Class/Packing Group: Not applicable

UN/NA Number: Not applicable

Hazard Labels: Not applicable

IMDG

Proper Shipping Name: Not applicable

Hazard Class/Packing Group: Not applicable

UN Number: Not applicable

Label: Not applicable

2004 North American Emergency Response Guidebook Number: None

SECTION 15 REGULATORY INFORMATION

Hazard Category for Section 311/312: None

Section 302 Extremely

Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product contains no chemicals subject to SARA Title III Section 313 Reporting requirements.

CERCLA 103 Reportable: None

California Proposition 65: This product is not known to contain any chemicals subject to California Proposition 65 regulation.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

Canadian WHMIS Classification: D2B. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16 OTHER INFORMATION

NFPA and HMIS:

NFPA Hazard Signal: Health: 1 Flammability: 1 Reactivity: 0 Special: None

HMIS Hazard Signal: Health: 1 Flammability: 1 Reactivity: 0 PPE: B

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

Solvents & Cements

Section E

Contents:

- 1. Cement**
- 2. PVC Primer**
- 3. CPVC Cement**



CLEAR
**PVC & CPVC
UN-PURPLE
PRIMER**

Purple Primer without
Purple Stains
Low VOC

60447
32 oz. 946 mL



DANGER!

FLAMMABLE LIQUID AND VAPOR.
CAUSES EYE IRRITATION. IRRITANT.
AVOID CONTACT WITH SKIN. IF SWALLOWED AND
NOT ABSORBED, MAY CAUSE DISCOMFORT OR
IRRITATION. MAY CAUSE RESPIRATORY IRRITATION.
CONTAINS A CHEMICAL CLASSIFIED BY THE US EPA
AS A SUSPECTED POSSIBLE CARCINOGEN.
SEE OTHER LABEL CAREFULLY BEFORE USE



OSHA-Required Health And Safety Information!

This Material Safety Data Sheet (MSDS) was requested moments ago from Hercules Automated Fax Information System. Please forward it immediately to the person in charge of MSDS's, or retain it at the machine until claimed.

Section 1

MATERIAL SAFETY DATA SHEET # 62 Hercules PVC & CPVC Purple Primer

Date Prepared: 1/7/1992 Last Reviewed: 1/26/2009

Meets OSHA 29 CFR 1910.1200



**MATERIAL
SAFETY
INFORMATION
SERVICE**

Hercules Chemical Company Inc.
111 South Street
Passaic NJ 07055
Phone (800) 221-9330
Fax (800) 333-3456

Section 2 - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity;
Common Name(s), CAS Numbers)

OSHA PEL

ACGIH TLV

Other Limits

Upper Bound
Limit if SARA
Reportable

| | | | | |
|-------------------------------|---------|--------|----------|----|
| Tetrahydrofuran(109-99-9) | 200PPM | 200PPM | | |
| Methyl Ethyl Ketone (78-93-3) | 200PPM | 200PPM | N/A | -- |
| Cyclohexanone (108-94-1) | 50PPM | 20PPM | N/A | |
| Acetone (67-64-1) | 1000PPM | 500PPM | 750 STEL | |

HMIS Hazard Rating: Health: 3 Flammability: 4 Reactivity: 1 Personal Protection: G

Section 3 - Physical/Chemical Characteristics

| | | | |
|---|---|-----------------------------|---|
| Boiling Point (°F): | Specific Gravity (H ₂ O = 1): | Vapor Density (Air = 1): | Vapor Pressure (mm Hg): |
| 133° F Based on first boiling component - Acetone | 0.820 ± 0.03 | 2.0 to 2.5 | 400 @ 104° F Based on first boiling component - Acetone |
| Melting Point (° F): | Evaporation Rate: (Butyl Acetate = 1) | Solubility in Water: | VOC Level (g/l): |
| N/A | 7-11 | 50% to 75% | 510 |
| Appearance And Color: | Purple Liquid | Odor: | Ethereal & Acetone-like |

Section 4 - Fire And Explosion Hazard Data

| | | | |
|--|-------------------|------|-------|
| Flash Point: | Flammable Limits: | LEL: | UEL: |
| 0 to -4° F (T.C.C.) (Based on Acetone) | | 2% | 13.0% |

Extinguishing Media: Foam/Dry Chemical/Carbon Dioxide

Special Firefighting Procedures:

Handle as flammable liquid. Wear self-contained breathing apparatus & chemical goggles. Water may be ineffective, but should be used to keep fire-exposed containers cool.

Unusual Fire And Explosion Hazards:

Vapor is heavier than air and travels considerable distance to source of ignition and flashback. On long standing may form peroxides which may cause violent reaction especially upon evaporation to dryness.

Continued on Next Page

Section E

#1

Section 5 - Reactivity Data

Stability: Stable **Conditions To Avoid:** Keep in closed containers away from sparks & open flame.

Incompatibility (Materials To Avoid): Strong oxidizing materials, Lithium Aluminum Hydride, Sodium Aluminum Hydroxide, Sodium & Potassium Hydroxides

Hazardous Decomposition: Carbon dioxide and carbon monoxide are formed. Irritating peroxide fumes formed when heated to decomposition.

Hazardous Polymerization: Avoid excessive exposure to air and cationic initiators like Lewis Acids.

Section 6 - Health Hazard Data

Routes of Entry: Inhalation YES/Primary Skin YES/Primary Ingestion YES/Secondary

Health Hazards:

Corrosive to eyes and skin irritant. Severe overexposure can cause headache, dizziness and narcosis. May cause dermatosis and dermatitis with prolonged repeated contact.

Carcinogenicity: NTP NO IARC NO OSHA Regulated NO

Signs And Symptoms of Exposure:

INGESTION: No effects expected from ingestion of small amount. INHALATION: Will cause irritation of mucous membranes, nose, eyes, & throat; coughing, difficulty of breathing. Exposure to high vapor concentration may cause headache, dizziness, nausea, narcosis. SKIN CONTACT: Prolonged skin contact causes common solvent defatting effect. EYE CONTACT: Vapors slightly uncomfortable. Splashes irritating. Will cause painful burning or stinging of eyes & lids, watering of eyes and Conjunctiva.

Medical Conditions Generally Aggravated By Exposure:

No data found

Emergency And First Aid Procedures:

INGESTION: DO NOT INDUCE VOMITING. If conscious, dilute by giving 2 glasses of water. Call physician immediately. INHALATION: Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call physician. SKIN CONTACT: Wash affected area with soapy water. Remove contaminated clothing. EYE CONTACT: Immediately flush eyes with plenty of water for 15 minutes. Consult physician.

Continued on Next Page

Section E**#1**

Section 7 - Precautions For Safe Handling And Use:**Steps To Be Taken In Case Material Is Released Or Spilled:**

Eliminate sources of ignition. Absorb with sand or inert absorbing material. Dispose of with solid waste in accordance with all regulations. Flush spill area with water, avoid flushing into confined areas.

Waste Disposal Method:

Incinerate in accordance with federal, state and local regulations.

Precautions To Be Taken In Handling And Storing:

Store in cool, well-ventilated area. Keep away from open flame and sources of ignition.

Other Precautions:

Use normal good personal hygiene.

Section 8 - Control Measures:**Respiratory Protection:**

In confined spaces, or other circumstances where adequate ventilation cannot be assured, use NIOSH approved respirator, positive-pressure airline mask or SCBA Self-Contained Breathing Apparatus.

Ventilation: Local Exhaust As required

Mechanical All ventilating devices must be located so they do not provide a source of ignition.

Special When using cements in an area of limited ventilation, use a ventilation device such as a fan or air mover to maintain a safe air concentration.

Other: N/A

Gloves: PVA gloves.

Eye Protection: Chemical safety goggles.

Other Protective Clothing: Apron, boots, eye bath, safety shower.

Work/Hygienic Practices Wash thoroughly after handling. Avoid ingestion of the cements. Do not eat or drink when using cements or in the vicinity where such cements are being used.

Section E**#1****FACTS**
Faxed
AST!

For Hercules Material Safety Data Sheets by fax anytime, day or night, just call 1-800-942-INFO (1-800-942-4636) from any Touch-Tone phone. Have your fax number ready. Checking the product label for the correct MSDS # will save time.



MILKY WHITE

MULTIPURPOSE PVC-CPVC

MEDIUM BODY
FAST SET

Plastic Pipe
Cement

LOW VOC



DANGER:

Keep away from children and pets.
Do not use on hot surfaces or in contact with
oil, grease, or solvents. Do not use on
polyethylene, polypropylene, and
other plastics. Do not use on
metal. Do not use on
surfaces that are painted, stained, or
otherwise treated. Do not use
on surfaces that are not
recommended for use.

See label for more information.



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Section 1

MATERIAL SAFETY DATA SHEET # 61 Hercules CPVC Cement

Date Prepared: 3/27/1989 Last Reviewed: 8/27/2007

Meets OSHA 29 CFR 1910.1200



**MATERIAL
SAFETY
INFORMATION
SERVICE**

Hercules Chemical Company Inc.
111 South Street
Passaic NJ 07055
Phone (800) 221-9330
Fax (800) 333-3456

Section 2 - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity;
Common Name(s), CAS Numbers)

OSHA PEL

ACGIH TLV

Other Limits

Upper Bound
Limit if SARA
Reportable

Tetrahydrofuran (109-99-9)

200PPM

200PPM

N/A

--

Cyclohexanone (108-94-1)

50PPM

20PPM

N/A

--

Section E

#2

#3

HMIS Hazard Rating: Health: 3 Flammability: 4 Reactivity: 1 Personal Protection: G

Section 3 - Physical/Chemical Characteristics

Boiling Point (°F):

Specific Gravity
(H₂O = 1):

Vapor Density
(Air = 1):

Vapor Pressure
(mm Hg):

151° F Based on first boiling component-THF

0.935 ± 0.03

2.0 to 2.5

143 Based on first boiling
component-THF

Melting Point (° F):

Evaporation Rate:
(Butyl Acetate = 1)

Solubility in Water:

N/A

7-11

60% to 85%

Appearance And Color:

Orange Viscous Liquid

Odor: Ethereal & Acetone-like

Section 4 - Fire And Explosion Hazard Data

Flash Point:

Flammable Limits:

LEL:

UEL:

6.0° F (T.C.C.) (Based on THF)

2%

11.8%

Extinguishing Media: Foam/Dry Chemical/Carbon Dioxide

Special Firefighting Procedures:

Handle as flammable liquid. wear self-contained breathing apparatus & chemical goggles. Water may be ineffective, but should be used to keep fire-exposed containers cool.

Unusual Fire And Explosion Hazards:

Vapor is heavier than air and travels considerable distance to source of ignition and flashback. On long standing may form peroxides which may cause violent reaction especially upon evaporation to dryness.

Continued on Next Page

Section 5 - Reactivity Data

Stability: Stable **Conditions To Avoid:** Keep in closed containers away from sparks & open flames.

Incompatibility (Materials To Avoid): Strong oxidizing materials, Lithium Aluminum Hydride, Sodium Aluminum Hydroxide, Sodium & Potassium Hydroxides.

Hazardous Decomposition: Carbon dioxide and carbon monoxide are formed. Irritating peroxide fumes formed when heated to decomposition.

Hazardous Polymerization: Avoid excessive exposure to air and cationic initiators like Lewis Acids.

Section 6 - Health Hazard Data

Routes of Entry: Inhalation YES/Primary Skin YES/Primary Ingestion YES/Secondary

Health Hazards:

Corrosive to eyes & skin irritant. Severe overexposure can cause headache, dizziness, & narcosis. May cause dermatosis & dermatitis with prolonged repeated contact.

Carcinogenicity: NTP NO IARC NO OSHA Regulated NO

Signs And Symptoms of Exposure:

INGESTION: No effect of exposure expected. INHALATION: Will cause irritation of mucous membranes, nose, eyes, & throat coughing, difficulty of breathing. Exposure to high vapor concentration may cause headache, dizziness, nausea, narcosis. SKIN CONTACT: Prolonged contact causes common solvent defatting effect. EYE CONTACT: Vapors slightly uncomfortable, splashes irritating. Will cause painful burning or stinging of eyes and lids, watering of eyes and inflammation of conjunctiva.

Medical Conditions Generally Aggravated By Exposure:

No data found

Emergency And First Aid Procedures:

INGESTION: DO NOT INDUCE VOMITING. If conscious, dilute by giving two glasses of water. Call a physician immediately. INHALATION: Remove to fresh air, if not breathing; give artificial respiration preferably mouth to mouth. If breathing is difficult give oxygen. Call a physician. SKIN CONTACT: Wash affected skin area with soapy water. Remove contaminated clothing. EYE CONTACT: Immediately flush eyes with plenty of water for 15 minutes. Consult a physician.

Continued on Next Page

Section E**#2****#3**

Section 7 - Precautions For Safe Handling And Use:**Steps To Be Taken In Case Material Is Released Or Spilled:**

Eliminate sources of ignition. Absorb with sand or inert absorbing material and dispose of with solid waste according to federal, state and local regulations. Flush spill area with water, avoid flushing into confined areas.

Waste Disposal Method:

Incinerate in accordance with the federal, state and local regulations.

Precautions To Be Taken In Handling And Storing:

Store in cool place, well-ventilated area. Keep away from open flame and sources of ignition.

Other Precautions:

Use normal good personal hygiene

Section 8 - Control Measures:**Respiratory Protection:**

In confined spaces or other circumstances where adequate ventilation cannot be assured use NIOSH-approved respirator, positive pressure airline mask, or self contained breathing apparatus.

Ventilation: Local Exhaust As required

Mechanical All ventilating devices must be located so they do not provide a source of ignition.

Special When using cements in an area of limited ventilation, use a ventilation device such as a fan or air mover to maintain a safe air concentration.

Other: N/A

Gloves: PVA gloves.

Eye Protection: Chemical safety goggles.

Other Protective

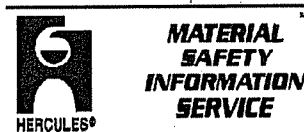
Clothing: Apron, boots, eye bath, safety shower.

Work/Hygienic Practices: Wash thoroughly after handling. Avoid ingestion of the cements. Do not eat or drink when using cements or in the vicinity where such cements are being used.

Section E

#2

#3

**FACTS**
Faxed
FAST!

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Putty, Solder, Flux

Section F

Contents:

1. LEAD FREE SOLDER
2. NO#5 PASTE
3. FLUX
4. PLUMBER PUTTY

Section F



Section F



MATERIAL SAFETY DATA SHEET

MSDS Number: 1600F

Section 1

DÉTAILS RELATIFS AU PRODUIT ET COORDONNÉES DE LA SOCIÉTÉ

Appellation commerciale: OATEY 95/5 LEAD-FREE PLUMBING WIRE SOLDER
OATEY 95/5 LEAD-FREE ACID CORE WIRE SOLDER
OATEY 95/5 LEAD-FREE ROSIN CORE WIRE SOLDER

Numéros de produit: 95/5 -22004, 22017, 22018, 22025, 53026, 53027, 530181, 53189 95/5 AC - 53170, 53172, 53174, 53176 95/5 RC - 53171, 53173, 53175, 53177, 53190, 29031

Utilisation du produit: Metal d apport

Formule:

Voir la section 3

Synonymes: Metal d apport, brasure

Raison sociale: Oatey Company 4700 West 160th Street, Cleveland, Ohio 44135

etadresse postale: www.oatey.com

N° de téléphone: (216) 267-7100

(Oatey):

N° de téléphoned'urgence: For Emergency First Aid call 1-877-740-5015. For chemical emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.

Rédacteur: Technical Department

Date de rédaction: 04/07/13

Section F

#1

Section 2 RENSEIGNEMENTS RELATIFS AUX RISQUES

Emergency Overview:

Situations d'urgence - Aperçu:

Fil métallique gris argent. Les émanations peuvent être dangereuses pendant le soudage. Les émanations peuvent irriter les yeux, causer des maux de tête et irriter les voies respiratoires. L'ingestion des alliages métalliques peut être dangereuse.

Classification de risque OSHA: Non dangereux tel quel. Pendant l'utilisation, effet irritant et effets sur les organes.

Section 3 COMPOSITION/DÉTAILS RELATIFS AUX INGRÉDIENTS

For 95/5 solid wire

| INGRÉDIENTS: | % poids: | NUMÉRO CAS: | TLV ACHIH MPT: | PEL OSHA MPT |
|--------------|-----------|-------------|----------------|--------------|
| Étain | 60 - 100% | 7440-31-5 | 2 mg/m3 | 2 mg/m3 |
| Antimoine | 3 - 7% | 7440-36-0 | 0,5 mg/m3 | 0,5 mg/m3 |

For 95/5 flux à l'acide

| INGRÉDIENTS: | % poids: | NUMÉRO CAS: | TLV ACHIH MPT: | PEL OSHA MPT |
|----------------|-----------|-------------|----------------|--------------|
| Étain | 60 - 100% | 7440-31-5 | 2 mg/m3 | 2 mg/m3 |
| Antimoine | 3 - 7% | 7440-36-0 | 0,5 mg/m3 | 0,5 mg/m3 |
| Flux à l'acide | 0,1 - 1% | Non connu | Aucun Établi | Aucun Établi |

For 95/5 flux à la colophane

| INGRÉDIENTS: | % poids: | NUMÉRO CAS: | TLV ACHIH MPT: | PEL OSHA MPT |
|---------------------|-----------|-------------|----------------|--------------|
| Étain | 60 - 100% | 7440-31-5 | 2 mg/m3 | 2 mg/m3 |
| Antimoine | 3 - 7% | 7440-36-0 | 0,5 mg/m3 | 0,5 mg/m3 |
| Flux à la colophane | 0,1 - 1% | Non connu | Aucun Établi | Aucun Établi |

| | |
|------------------|--|
| Section 4 | PREMIERS SOINS |
| | COMPOSER LE 1-877-740-5015 ou 1-303-623-5716 À FRAIS VIRÉS |
| Peau: | En cas d'irritation, laver soigneusement avec de l'eau et du savon. Si l'irritation persiste, consulter un médecin. |
| Yeux: | Si le produit entre en contact avec les yeux, rincer immédiatement les yeux à l'eau en maintenant les paupières ouvertes jusqu'à éliminer tout le produit. Si l'irritation persiste, consulter un médecin. |
| Inhalation: | Évacuer la personne atteinte à l'air frais. Si la respiration est difficile, administrer de l'oxygène. Si la respiration est arrêtée, pratiquer la respiration artificielle. Calmer la victime et la couvrir chaudement. Contacter immédiatement un centre antipoison ou un médecin. |
| Ingestion: | NE PAS PROVOQUER LE VOMISSEMENT. L'ingestion ne constitue pas une voie de pénétration probable. Ne jamais rien administrer par voie orale à une personne inconsciente ou somnolente. Communiquer avec un centre antipoison ou l'urgence d'un hôpital. |

| | |
|--------------------------|--|
| Section 5 | MESURES DE LUTTE CONTRE LES INCENDIES |
| Point d'éclair /méthode: | Sans objet |
| Inflammabilité: | LIE = sans objet, LSE = sans objet |
| Moyens d'extinction: | Utiliser des moyens d'extinction appropriés pour combattre le feu environnant. |

| | |
|--|-------------|
| Méthodes spéciales de lutte contre l'incendie: | Sans objet |
| Risques inhabituels de feu et d'explosion: | Aucun connu |

| | |
|--------------------------------------|---|
| Produits de décomposition dangereux: | Ce matériau ne se décompose pas dans des conditions normales. S'il est surchauffé, il peut émettre des oxydes d'étain et d'antimoine. |
|--------------------------------------|---|

| | |
|-------------------------|--|
| Section 6 | MESURES EN CAS DE DÉVERSEMENT ACCIDENTEL |
| Déversements ou fuites: | Recueillir les solides et les déposer dans des contenants adéquatement identifiés. |

| | |
|------------------|---|
| Section 7 | MANIPULATION ET STOCKAGE |
| Manutention: | Éviter d'inhalier les émanations, les vapeurs ou la poussière. Garder à l'écart des enfants. Se laver soigneusement les mains après avoir manipulé le produit et avant de manger, de boire ou de fumer. |
| Stockage: | Stocker dans un endroit frais et sec, loin des sources de chaleur et des flammes nues. |
| Autre: | Aucune |

| | |
|--------------------------|---|
| Section 8 | MESURES CONTRE L'EXPOSITION/PROTECTION INDIVIDUELLE |
| Ventilation: | Une ventilation générale adéquate (équivalente à la ventilation extérieure) devrait suffire pour l'utilisation normale. Pour les activités où la valeur limite d'exposition peut être dépassée, une ventilation mécanique, par exemple un dispositif de ventilation par aspiration locale, pourrait être requise pour maintenir le niveau d'exposition sous les limites prescrites. |
| Protection respiratoire: | Pour les activités où la valeur limite d'exposition peut être dépassée, un respirateur ou un respirateur à adduction d'air homologué par NIOSH est recommandé. Le choix de l'appareil dépend du type et de la concentration du contaminant. Se conformer à 29 CFR 1910.134 et appliquer les pratiques d'hygiène industrielle recommandées. |
| Protection | Porter des gants et des manches longues pour éviter le contact direct avec la |

Section F

#1

cutanée: peau.
 Protection Lunettes de sécurité à écrans latéraux ou lunettes étanches.
 oculaire:
 Autre: Il est recommandé d'avoir à proximité une fontaine pour irrigation oculaire et une douche d'urgence.

Section 9 PROPRIÉTÉS PHYSIQUES ET CHIMIQUES

| | |
|-------------------------|-----------------------------|
| Point d'ébullition : | Non déterminé |
| Point de fusion : | 232 à 240 °C (450 à 464 °F) |
| Pression de vapeur : | Non déterminé |
| Densité de vapeur : | Air = 1) Supérieur à 1 |
| Composantes volatiles : | Aucun |
| Solubilité à l'eau : | Négligeable |
| Valeur pH : | Sans objet |
| Densité spécifique : | 9 à 11 |
| Taux d'évaporation : | Sans objet |
| Aspect : | Fil métallique gris argent |
| Odeur : | Aucun |
| Dissolution dans : | Sans objet |
| État : | Solide |

Section 10 STABILITÉ ET RÉACTIVITÉ

Stabilité: Stable.
 Conditions à Ne pas chauffer à plus de 250 °C (480 °F).
 éviter:
 Produits de En cas de surchauffe, oxydes d'étain et d'antimoine.
 décomposition
 dangereux:
 Incompatibilités/ Aucun
 stances à éviter:

Polymérisation Ne se produira pas.
 dangereuse:

Section 11 RENSEIGNEMENTS RELATIFS À LA TOXICITÉ

Inhalation: Les émanations de soudure peuvent irriter les voies respiratoires. L'exposition prolongée aux émanations peut causer une stannose, une pneumoconiose bénigne. L'inhalation répétée des émanations peut causer de l'asthme professionnel. Les symptômes peuvent être différés.
 Peau: Les émanations peuvent causer de l'irritation.
 Yeux: Les émanations peuvent causer de l'irritation.
 Ingestion: L'ingestion peut causer des douleurs abdominales, de la nausée, des vomissements, de la diarrhée, une gastro-intestinite et des lésions internes. L'ingestion chronique à long terme peut causer des lésions au foie, aux reins, au système nerveux et au système gastro-intestinal.
 Toxicité: Aucune donnée n'est disponible
 Sensibilisation: Aucun des composants n'a un effet sensibilisant connu.
 Cancérogénicité: Aucun des composants n'est homologué comme cancérogène connu ou probable par NTP, IARC ou OSHA.
 Mutagénicité: Aucun des composants n'est un mutagène connu.
 Toxicité pour la reproduction: Aucun des composants ne produit d'effet connu sur la reproduction.
 Problèmes médicaux aggravés par l'exposition: L'exposition aux émanations de ce produit peut augmenter le risque encouru par les personnes ayant une maladie de la peau, des poumons, des reins ou du foie préexistante.

Section 12 RENSEIGNEMENTS RELATIFS AUX EFFETS ÉCOLOGIQUES

Section F

#1

Section 13 FACTEURS À PRENDRE EN CONSIDÉRATION LORS DE LA MISE AU REBUT

Élimination des déchets: Mettre les déchets au rebut conformément aux règlements fédéraux, provinciaux et locaux en vigueur. Il revient à l'utilisateur de déterminer le procédé à employer au moment de la mise au rebut.

Numéro de déchet dangereux RCRA: Aucun

Numéro d'identification de déchet dangereux EPA: Aucun

Classe de danger EPA: Aucun

Section 14 RENSEIGNEMENTS RELATIFS AU TRANSPORT

DOT

Numéro UN/NA: Aucun

Nom d'expédition: Non réglementé

Classe de danger: Aucun

Groupe d'emballage: Aucun

Étiquettes de danger: Aucun

IMDG

Numéro UN: Aucun

Nom d'expédition: Non réglementé

Classe de danger: Aucun

Groupe d'emballage: Aucun

Étiquette: Aucun

Section F

#1

Numéro NAERG 2008 - North American Emergency Response Guidebook : Sans objet

Section 15 RENSEIGNEMENTS RELATIFS AUX RÈGLEMENTS

Catégorie de danger aux fins des sections 311/312: Risques aigus et chroniques pour la santé.

Section 302 Substances extrêmement dangereuses (TPQ): Ce produit ne contient aucun agent chimique réglementé dans SARA, section 302.

Agents chimiques toxiques homologués dans la section 313: Ce produit contient les agents chimiques suivants qui sont assujettis aux normes de déclaration de SARA Title III Section 313.

| Agent chimique | N° CAS | % poids |
|----------------|-----------|---------|
| Antimoine | 7440-36-0 | 3 - 7% |

Quantité à déclarer selon CERCLA 103: Ce produit ne contient aucun agent chimique à déclaration obligatoire selon CERCLA.

Proposition 65 (Californie): Ce produit ne contient aucun agent chimique réglementé en vertu de la proposition 65 de la Californie.

Inventaire TSCA: Tous les composants de ce produit figurent dans l'inventaire TSCA.

Classification SIMDUT: Classe D, section 2, sous-section B.

Classification SIMDUT: Ce produit a été classé conformément aux critères de risque du Règlement sur les produits contrôlés (RPC) et la fiche signalétique contient toutes les informations requises par le RPC.

Section 16**RENSEIGNEMENTS COMPLÉMENTAIRES**

NFPA et HMIS:

Classe de danger Santé : 1 Inflammabilité : 0 Réactivité : 0 Spécial : Aucun

NFPA:

Classe de danger Santé : 1 Inflammabilité : 0 Réactivité : 0 PPE : B

HMIS:

Avertissement :

Les renseignements fournis dans les présentes ont été réunis à partir de sources jugées fiables, à jour et exactes à notre connaissance. Cependant, nous se dégage de toute responsabilité en ce qui concerne les renseignements provenant d'autres sources et décline explicitement toute garantie ni n'assume aucune responsabilité quant à leur emploi.

Template: tmpl-so-f1

Section F**#1**

Oatey

No. 5

#30041

LEAD FREE SOLDER PASTE
CLEANS & FLUXES IN ONE STEP

PASTA FUNDENTE SIN PLOMO
LIMPIA Y FUNDE EN UN SOLO PASO

CLASSE

WARNING: ADVERTENCIA

CAUTION: SOLDER PASTE IS HEAVY
ON SURFACES OF SKIN DO NOT USE. THE PASTE IS
TOXIC. IT CAN CAUSE SKIN IRRITATION AND
ALLERGIC REACTIONS. AVOID CONTACT WITH EYES.
WASH YOUR HANDS THOROUGHLY AFTER USE.

AVVERTENZE: LA PASTA

È TOSICA. PUÒ CAUSARE

IRRITAZIONE E REAZIONI

ALLERGICHE. EVITARE IL

CONTATTO CON GLI OCCHI.

DOPO L'USO LAVARE

LE MANI accuratamente.

MATERIAL SAFETY DATA SHEET

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

Trade Name: OATEY #5 HOT WEATHER FLUX
Product Use: Flux for soldering.
Formula: See Section 2
Synonyms: Flux for Soldering Copper Pipe
Firm Name & Mailing Address: OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. <http://www.oatey.com>
Oatey Phone Number: (216) 267-7100 or (800) 321-9532
Emergency Phone Numbers: For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
Prepared By: Corporate Director - Safety and Environmental Compliance
Preparation Date: November 3, 2006

SECTION 2

COMPOSITION/INFORMATION ON INGREDIENTS

| <u>INGREDIENTS:</u> | <u>% wt/wt:</u> | <u>CAS NUMBER:</u> | <u>ACGIH TLV TWA:</u> | <u>OSHA PEL TWA:</u> |
|---------------------|-----------------|--------------------|----------------------------------|-----------------------|
| Petrolatum | 75 - 85% | 8009-03-8 | 5 mg/m3 (oil mist) | 5 mg/m3 (oil mist) |
| Zinc Chloride | 10 - 15% | 7646-85-7 | 1 mg/m3(fume) 2 mg/m3 STEL | 1 mg/m3(fume) |
| Ammonium Chloride | 1 - 5% | 12125-02-9 | 10 mg/m3 (fume) 20 mg/m3 STEL | None Established |

Section F
#2

SECTION 3

HAZARDS IDENTIFICATION

Emergency Overview:
Yellow paste with a slight odor. May cause burns to the eye and skin. Inhalation of fumes may cause respiratory irritation, metal fume fever, chills, nausea and vomiting. Swallowing may cause burns to the mouth or throat, vomiting, diarrhea and kidney or liver disorders. May be harmful if swallowed. Symptoms may be delayed.

OSHA Hazard Classification: Corrosive, target organ effects

SECTION 4

FIRST AID MEASURES

CALL 1-303-623-5716 COLLECT

Skin: Remove contaminated clothing. Wash thoroughly with soap and water. Call a physician or poison control center if irritation persists.
Eyes: Remove contact lenses if any. Rinse eyes with water for 15 minutes. Get immediate medical attention.
Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Keep victim quiet and warm. Call a poison control center or physician immediately.
Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

SECTION 5 FIRE FIGHTING MEASURES

Flashpoint / Method: 540 Degrees F (282 Degrees C)
Flammability: LEL = Not determined, UEL = Not determined
Extinguishing Small Fires: Use dry chemical, CO2, water, or foam extinguisher
Media: Large Fires: Evacuate area and call Fire Department immediately
Special Fire Firefighters should wear positive pressure self-contained
Fighting breathing apparatus and full protective clothing for fires in
Procedure: areas where chemicals are used or stored
Unusual Fire and None known.
Explosion
Hazards:
Hazardous Hydrocarbons, hydrogen chloride, zinc fumes, ammonia, smoke,
Decomposition carbon monoxide, carbon dioxide and nitrogen oxides.
Products:

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill or Ventilate area. Stop leak if it can be done without risk. Personnel
Leak cleaning up the spill should wear appropriate personal protective
Procedures: equipment. Take up spill with sand, earth or other absorbent material
and place into a clean, dry leak-proof container.

SECTION 7 HANDLING AND STORAGE

Handling: Do not get in eyes. Do not get on skin or clothing. Do not take
internally. Avoid breathing vapors or fumes. Use only with adequate
ventilation. Wash thoroughly after handling. Keep container closed when
not in use. Handle with care. Keep out of reach of children.
Storage: Store in original, labeled container.
Other: Containers, even empty will retain residue and may be harmful.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Good general ventilation (equivalent to outdoors) should be adequate
for normal use. For operations where the TLV may be exceeded,
mechanical ventilation such as local exhaust may be needed to maintain
exposure levels below applicable limits.
Respiratory For operations where the TLV may be exceeded, a NIOSH approved
Protection: particulate respirator or supplied air respirator is recommended.
Equipment selection depends on contaminant type and concentration,
select in accordance with 29 CFR 1910.134 and good industrial hygiene
practice. For firefighting, use self-contained breathing apparatus.
Skin Wear rubber gloves.
Protection:
Eye Safety glasses with sideshields or safety goggles.
Protection:
Other: Eye wash and safety shower should be available.

Section F
#2

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 638 Degrees F (337 Degrees C)
Melting Point: Not determined
Vapor Pressure: Not determined
Vapor Density: (Air = 1) Greater than 1
Volatile Components: 7-10%
Solubility In Water: Negligible
pH: Not applicable
Specific Gravity: 1.1
Evaporation Rate: Not applicable
Appearance: Yellow Paste
Odor: Very little odor
Will Dissolve In: Methylene Chloride
Material Is: Paste

SECTION 10 STABILITY AND REACTIVITY

Stability: Stable.
Conditions To Avoid: None.
Hazardous: Hydrocarbons, hydrogen chloride, zinc fumes, ammonia, smoke,
Decomposition: smoke, carbon monoxide, carbon dioxide and nitrogen oxides.
Products:
Incompatibility/ Strong oxidizing agents, potassium, cyanides and sulfides.
Materials To Avoid:
Hazardous: Will not occur.
Polymerization:

Section F

#2

SECTION 11 TOXICOLOGICAL INFORMATION

Inhalation: Fumes from heated product may be corrosive to mucous membranes and the respiratory system. Fumes may cause burning sensation, coughing, wheezing, shortness of breath, cyanosis, fever, chills, muscular pain, anemia, metallic taste in the mouth, headache, nausea, vomiting, sweating, diarrhea and pulmonary edema. Fumes may cause stannosis, a mild benign pneumoconiosis. Repeated inhalation of fumes may cause occupational asthma. Symptoms may be delayed.
Skin: Contact may cause irritation, ulcerations, burns or dermatitis. Symptoms may be delayed.
Eye: Vapors or fumes may cause redness, pain, blurred vision and corneal damage. Direct contact may cause burns and eye damage with possible blindness. Symptoms may be delayed.
Ingestion: May cause irritation or burns to the mouth and throat, nausea, vomiting or diarrhea. Death may occur from strictures of the esophagus and pylorus. Symptoms may be delayed.
Toxicity Data: Petrolatum: No data available
Zinc Chloride: Oral rat LD50: 350 mg/kg
Ammonium Chloride: Oral rat LD50: 1,650 mg/kg
Sensitization: None of the components are known to cause sensitization.
Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA.
Mutagenicity: None of the components have been found to be mutagenic.
Reproductive Toxicity: None of the components are known to cause adverse reproductive effects.
Medical Conditions: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.
Aggravated By
Exposure:

SECTION 12 ECOLOGICAL INFORMATION

No data available.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose of in accordance with federal, state, and local regulations.
It is the responsibility of the end-user to determine at the time of disposal of the product.

RCRA Hazardous Waste Number: None
EPA Hazardous Waste ID Number: None
EPA Hazard Waste Class: None

SECTION 14 TRANSPORT INFORMATION

DOT

Proper Shipping Name: Not regulated
Hazard Class/Packing Group: None
UN/NA Number: None
Hazard Labels: None

IMDG

Proper Shipping Name: Not regulated
Hazard Class/Packing Group: None
UN Number: None
Label: None

2004 North American Emergency Response Guidebook Number: None

Section F

#2

SECTION 15 REGULATORY INFORMATION

Hazard Category for Section 311/312: Acute Health, Chronic Health

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

| <u>Chemical</u> | <u>CAS #</u> | <u>% wt</u> |
|-----------------|--------------|-------------|
| Zinc Chloride | 7646-85-7 | 10-15% |

CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Zinc Chloride (30% max) of 1,000 lbs, is 3,300 lbs.

| <u>Chemical</u> | <u>CAS #</u> | <u>RQ, lbs.</u> |
|-------------------|--------------|-----------------|
| Zinc Chloride | 7646-85-7 | 1,000 |
| Ammonium Chloride | 12125-02-6 | 5,000 |

California Proposition 65: Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

TSCA Inventory: This product does not contain chemicals regulated under California Proposition 65.

Canadian WHMIS Classification: All of the components of this product are listed on the TSCA inventory.

Class E; Class D, Division 2, Subdivision B
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16 OTHER INFORMATION

NFPA and HMIS:

NFPA Hazard Signal: Health: 3 Flammability: 1 Reactivity: 0 Special: None

HMIS Hazard Signal: Health: 3* Flammability: 1 Reactivity: 0 PPE: B

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

Section F

#2

MATERIAL SAFETY DATA SHEET

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

Trade Name: OATEY H-20-5® WATER SOLUBLE PASTE FLUX
Product No.: 30130, 30131, 30132, 30133
Product Use: Water flushable flux for copper pipe
Formula: See Section 2
Synonyms: Flux for Copper Pipe
Firm Name & Mailing Address: OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. <http://www.oatey.com>
Oatey Phone Number: (216) 267-7100 or (800) 321-9532
Emergency Phone Numbers: For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
Prepared By: Corporate Director - Safety and Environmental Compliance
Preparation Date: April 29, 2008

SECTION 2

COMPOSITION/INFORMATION ON INGREDIENTS

| <u>INGREDIENTS:</u> | <u>%wt/wt:</u> | <u>CAS NUMBER:</u> | <u>ACGIH TLV TWA:</u> | <u>OSHA PEL TWA:</u> |
|---------------------|----------------|--------------------|----------------------------------|----------------------|
| Triethanolamine | 7 - 13% | 637-39-8 | None | None |
| Hydrochloride | | | Established | Established |
| Zinc Chloride | 3 - 7% | 7646-85-7 | 1 mg/m3 (fume) 2 mg/m3 STEL | 1 mg/m3 (fume) |
| Ammonium Chloride | 1 - 5% | 12125-02-9 | 10 mg/m3 (fume) 20 mg/m3 STEL | None Established |

Section F
#2

OSHA Hazard Classification: Irritant, target organ effects

SECTION 3

HAZARDS IDENTIFICATION

Emergency Overview:

Yellow paste with a slight odor. May cause severe irritation to the eye and skin. Inhalation of fumes may cause respiratory irritation, fever, chills, nausea or vomiting. Swallowing may cause severe irritation to the mouth or throat, vomiting, diarrhea and kidney or liver disorders. May be harmful if swallowed. Symptoms may be delayed.

SECTION 4

FIRST AID MEASURES

CALL 1-303-623-5716 COLLECT

Skin: Remove contaminated clothing. Wash thoroughly with soap and water. Call a physician or poison control center if irritation persists.
Eyes: Remove contact lenses if any. Rinse eyes with water for 15 minutes. Get immediate medical attention.
Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Keep victim quiet and warm. Call a poison control center or physician immediately.
Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

SECTION 5 FIRE FIGHTING MEASURES

Flashpoint / Method: Not applicable
Flammability: LEL = Not applicable, UEL = Not applicable
Extinguishing Small Fires: Use dry chemical, CO2, water, or foam extinguisher
Media: Large Fires: Evacuate area and call Fire Department immediately
Special Fire Firefighters should wear positive pressure self-contained
Fighting breathing apparatus and full protective clothing for fires in
Procedure: areas where chemicals are used or stored
Unusual Fire and None known.
Explosion
Hazards:
Hazardous Hydrogen chloride, zinc fumes, ammonia, smoke, carbon monoxide,
Decomposition carbon dioxide and nitrogen oxides.
Products:

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill or Ventilate area. Stop leak if it can be done without risk. Personnel
Leak cleaning up the spill should wear appropriate personal protective
Procedures: equipment. Take up spill with sand, earth or other absorbent material
and place into a clean, dry leak-proof container. See Section 13 for
disposal information.

SECTION 7 HANDLING AND STORAGE

Handling: Do not get in eyes. Do not get on skin or clothing. Do not take
internally. Avoid breathing vapors or fumes. Use only with adequate
ventilation. Wash thoroughly after handling. Keep container closed when
not in use. Handle with care. Keep out of reach of children.
Storage: Store in original, labeled container.
Other: Containers, even empty will retain residue and may be harmful.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Good general ventilation (equivalent to outdoors) should be adequate
for normal use. For operations where the TLV may be exceeded,
mechanical ventilation such as local exhaust may be needed to maintain
exposure levels below applicable limits.
Respiratory For operations where the TLV may be exceeded, a NIOSH/MSHA approved
Protection: particulate respirator or supplied air respirator is recommended.
Equipment selection depends on contaminant type and concentration,
select in accordance with 29 CFR 1910.134 and good industrial hygiene
practice. For firefighting, use self-contained breathing apparatus.
Skin Wear rubber gloves.
Protection:
Eye Safety glasses with sideshields or safety goggles.
Protection:
Other: Eye wash and safety shower should be available.

Section F
#2

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: Not applicable
Melting Point: Not applicable
Vapor Pressure: Not determined
Vapor Density: (Air = 1) Greater than 1
Volatile Components: 7-10%
Solubility In Water: Soluble
pH: Not determined
Specific Gravity: Not determined
Evaporation Rate: Not determined
Appearance: Yellow Paste
Odor: Very little odor
Will Dissolve In: Water
Material Is: Paste

SECTION 10 STABILITY AND REACTIVITY

Stability: Stable.
Conditions To Avoid: None.
Hazardous: Hydrogen chloride, zinc fumes, ammonia, smoke, carbon monoxide,
Decomposition: carbon dioxide and nitrogen oxides.
Products:
Incompatibility/ Strong oxidizing agents, potassium, cyanides and sulfides.
Materials To Avoid:
Hazardous: Will not occur.
Polymerization:

Section F
#2

SECTION 11 TOXICOLOGICAL INFORMATION

Inhalation: Fumes from heated product may be corrosive to mucous membranes and the respiratory system. Fumes may cause burning sensation, coughing, wheezing, shortness of breath, cyanosis, fever, chills, muscular pain, anemia, metallic taste in the mouth, headache, nausea, vomiting, sweating, diarrhea and pulmonary edema. Fumes may cause stannosis, a mild benign pneumoconiosis. Repeated inhalation of fumes may cause occupational asthma. Symptoms may be delayed.
Skin: Contact may cause severe irritation, ulcerations, or dermatitis. Symptoms may be delayed.
Eye: Vapors or fumes may cause redness, pain, blurred vision and corneal damage. Direct contact may cause severe irritation and eye damage with possible blindness. Symptoms may be delayed.
Ingestion: May cause severe irritation to the mouth and throat, nausea, vomiting or diarrhea. Death may occur from strictures of the esophagus and pylorus. Symptoms may be delayed.
Toxicity Data: Triethanolmine Hydrochloride: No data available.
Zinc Chloride: Oral rat LD50: 350 mg/kg.
Ammonium Chloride: Oral rat LD50: 1,650 mg/kg.
Sensitization: None of the components are known to cause sensitization.
Carcinogenicity: None of the components present at greater than 1% are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA.
Mutagenicity: None of the components have been found to be mutagenic.
Reproductive Toxicity: None of the components are known to cause adverse reproductive effects.
Medical Conditions: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.
Aggravated By
Exposure:

SECTION 12 ECOLOGICAL INFORMATION

No data available.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose of in accordance with federal, state, and local regulations.
It is the responsibility of the end-user to determine at the time of disposal of the product.

RCRA Hazardous Waste Number: None
EPA Hazardous Waste ID Number: D002
EPA Hazard Waste Class: Corrosive

SECTION 14 TRANSPORT INFORMATION

DOT

Proper Shipping Name: Not regulated
Hazard Class/Packing Group: Not regulated
UN/NA Number: Not regulated
Hazard Labels: Not regulated

IMDG

Proper Shipping Name: Not regulated
Hazard Class/Packing Group: Not regulated
UN Number: Not regulated
Label: Not regulated

Section F

#2

SECTION 15 REGULATORY INFORMATION

Hazard Category for Section 311/312: Acute Health, Chronic Health

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

| <u>Chemical</u> | <u>CAS #</u> | <u>%wt/wt</u> |
|-----------------|--------------|---------------|
| Zinc Chloride | 7646-85-7 | 3-7% |

CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Zinc Chloride (7% maximum) of 1,000 lbs, is 14,286 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product does not contain chemicals regulated under California Proposition 65.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

Canadian WHMIS Classification: Class D, Division 2, Subdivision B
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16 **OTHER INFORMATION**

NFPA and HMIS:

NFPA Hazard Signal: Health: 2 Flammability: 0 Reactivity: 1 Special: None

HMIS Hazard Signal: Health: 2* Flammability: 0 Reactivity: 1 PPE: B

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

Section F
#2



Dapco

H-20[®]

WATER SOLUBLE PASTE FLUX
FUNDENTE EN PASTA
HIDROSOLUBLE



WARNING/ADVERTENCIA

SEE ALSO DATA SHEET. IRRITANT. HARMFUL IF SWALLOWED.
VAPOR MAY BE IRRITANT.

IMPAGNE DE LOS OJOS Y LA PIEL. DANGEROUS SI SE INGERE.

LOS VAPORES PUEDEN SER IRRITANTES.

HAZARD: DO NOT SMOKES OR OPEN FLAME.

EVITAR FUMAR Y ENCENDIR FUEGO AL APLICAR.

Contents: Net 4 oz. (113g)



PLUMBER'S PUTTY

STAINLESS, CAULKING & SEALING COMPOUND
COMPUESTO PARA CALAFATEAR Y SELLAR SIN MARCAR

Para instalar
válvulas, uniones, te-
nidos, etc.
No se agrieta, se
quita fácilmente
con un cepillo.

Para instalar
válvulas, uniones,
teñidos, etc.
No se agrieta, se
quita fácilmente
con un cepillo.

MATERIAL SAFETY DATA SHEET

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

Trade Name: OATEY PLUMBER'S PUTTY
Product No.: 31166, 31170, 31174
Product Use: Stainless fixture setting compound.
Formula: See SECTION 2
Synonyms: Putty.
Firm Name & Mailing Address: OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. <http://www.oatey.com>
Oatey Phone Number: (216) 267-7100 or (800) 321-9532
Emergency Phone Numbers: For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the US: 1-703-527-3887.
Prepared By: Corporate Director - Safety and Environmental Compliance
Preparation Date: April 15, 2008

SECTION 2

COMPOSITION/INFORMATION ON INGREDIENTS

| INGREDIENTS: | %wt/wt: | CAS NUMBER: | ACGIH TLV TWA: | OSHA PEL TWA: | OTHER: |
|-----------------|----------|-------------|----------------|--------------------------|--------|
| Limestone | 60 - 90% | 1317-65-3 | 10 mg/M3 | 15 mg/M3 (Total dust) | None |
| Hydrocarbon oil | 10 - 30% | 64742-52-5 | 5 mg/M3 | 5 mg/M3 | None |
| Talc | 1 - 5% | 14807-96-6 | 2 mg/M3 | 2 mg/M3 | None |
| Clay | 1 - 5% | 68953-58-2 | 10 mg/M3 | 10 mg/M3 | None |

Section F
#4

OSHA Hazard Classification: Not hazardous

SECTION 3

HAZARDS IDENTIFICATION

Emergency Overview:
White putty with a mild petroleum odor. May cause mechanical irritation of the eyes.

SECTION 4

FIRST AID MEASURES

CALL 1-303-623-5716 COLLECT

Skin: Wash all exposed areas with soap and water.
Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.
Inhalation: Not a likely route of entry.
Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Call a physician.

SECTION 5

FIRE FIGHTING MEASURES

Flashpoint / Method: Not applicable
Flammability: LEL = ND, UEL = ND
Extinguishing Media: Use dry chemical, CO2, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.
Special Fire Fighting Procedure: As appropriate for surrounding fire.
Unusual Fire and Explosion Hazards: None
Hazardous Decomposition Products: Combustion will produce toxic and irritating vapors including carbon monoxide and carbon dioxide.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill or Sweep up dried material and dispose of with ordinary trash.
Leak
Procedures:

SECTION 7 HANDLING AND STORAGE

Handling: No special handling required. Wash thoroughly after handling.
Use good hygiene practices.
Storage: Store in a cool, dry area.
Other: None.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Use with adequate ventilation.
Respiratory If putty dries and becomes dusty, wear a dust respirator
Protection: during clean-up.
Skin Gloves are not normally required.
Protection:
Eye Safety glasses with side shields are recommended.
Protection:
Other: Eye wash should be available.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: Not applicable
Melting Point: Not applicable
Vapor Pressure: Not determined
Vapor Density: Not determined
Volatile Components: Not determined
Solubility In Water: Negligible.
pH: Not applicable
Specific Gravity: 2.0 @ 20 Degrees C
Evaporation Rate: Not applicable
Appearance: White Putty
Odor: Petroleum odor
Will Dissolve In: Not determined
Material Is: Putty

SECTION 10 STABILITY AND REACTIVITY

Stability: Stable.
Conditions To Avoid: Avoid heat, flames and other sources of ignition.
Hazardous Combustion will produce toxic and irritating vapors
Decomposition including carbon monoxide and carbon dioxide.
Products:
Incompatibility/ Strong oxidizing agents.
Materials To Avoid:
Hazardous Will not occur.
Polymerization:

Section F

#4

SECTION 11 TOXICOLOGICAL INFORMATION

Inhalation: Not a likely route of entry.
Skin: May cause mild irritation. Prolonged and repeated contact may cause dermatitis.
Eye: Contact may cause irritation.
Ingestion: Swallowing may cause a laxative effect including cramps and diarrhea.
Chronic: Prolonged or repeated overexposure cause dermatitis.
Toxicity:
Toxicity Data: Not available
Sensitization: None of the components are known to cause sensitization.
Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA.
Mutagenicity: None of the components are known to be mutagenic.
Reproductive: None of the components are known to be toxic to reproduction.
Toxicity:
Medical: None known.
Conditions:
Aggravated By:
Exposure:

SECTION 12 ECOLOGICAL INFORMATION

No ecotoxicological information known.
VOC: This product has very low VOC level.
Information:

Section F

#4

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.
RCRA Hazardous Waste Number: Not a hazardous waste.
EPA Hazardous Waste ID Number: Not a hazardous waste.
EPA Hazard Waste Class: Not a hazardous waste.

SECTION 14 TRANSPORT INFORMATION

| | <u>Less than 1 Liter (0.3 gal)</u> | <u>Greater than 1 Liter (0.3 gal)</u> |
|-----------------------------|------------------------------------|---------------------------------------|
| DOT | | |
| Proper Shipping Name: | Not regulated. | Not regulated. |
| Hazard Class/Packing Group: | None | None |
| UN/NA Number: | None | None |
| Hazard Labels: | None | None |
| IMDG | | |
| Proper Shipping Name: | Not regulated | |
| Hazard Class/Packing Group: | None | |
| UN Number: | None | |
| Label: | None | |

2004 North American Emergency Response Guidebook Number: None

SECTION 15 REGULATORY INFORMATION

Hazard Category for Section 302 Extremely Hazardous Substances (TPQ): Not hazardous.
This product does not contain chemicals regulated under SARA Section 302.
Section 313 Toxic Chemicals: This product does not contain any chemicals regulated under SARA Title III Section 313.
CERCLA 103 Reportable Quantity: This product does not contain any chemicals regulated under CERCLA.
California Proposition 65: This product does not contain any chemicals subject to California Proposition 65 regulation.
TSCA Inventory: All of the components of this product are listed on the TSCA inventory.
Canadian WHIMS Classification: Not a controlled product.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16 OTHER INFORMATION

NFPA and HMIS:
NFPA Hazard Signal: Health: 0 Flammability: 0 Reactivity: 0 Special: None
HMIS Hazard Signal: Health: 0 Flammability: 0 Reactivity: 0 PPE: A

Section F

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

#4

Equipment Fuel Soldering gases

Contents:

Section G

- 1. GASOLINE**
- 2. DIESEL**
- 3. LOW SULFUR DIESEL**
- 4. MAPP GAS**
- 5. PROPANE**
- 6. ACETYLENE**

Section G



EAGLE

MANUFACTURING COMPANY
WILLOWBURG, N. H. 03096
UL-50-10 TYPE I

Capacity 5.0 L.
1.32 U.S. Gal. - 3.78 L.

Refer to label for instructions and
UL listing information.

SAFETY

DANGER
EXPOSED FLAMMABLE VAPORS
MAY CAUSE FIRE OR EXPLOSION.

A flammable liquid or solid which, under conditions specified on the label, presents a fire or explosion hazard when exposed to fire or heat, or to oxidizing agents, or to other sources of ignition.

Keep away from heat, open flames, electric sparks, and other sources of ignition. Do not use near fire or heat. Do not use in confined spaces. Do not use in the presence of oxidizing agents or other sources of ignition.

Do not use in the presence of oxidizing agents or other sources of ignition. Do not use in the presence of oxidizing agents or other sources of ignition. Do not use in the presence of oxidizing agents or other sources of ignition.



UNLEADED GASOLINE (ALL GRADES)

MATERIAL SAFETY DATA SHEET

Petrocom Energy Group, LLC
1330 Post Oak Blvd., Suite 2350
Houston, Texas 77056
Phone: 713-418-3000
Fax: 713-418-3001

Revision Date: 03/05/2008

Section 1: Product Identification

Name: Unleaded Gasoline
Synonyms: Regular/Midgrade/Premium Gasoline, Motor Fuel, Reformulated Gasoline, RFG, Conventional Gasoline.
CAS No.: 86290-81-5
MSDS No.: PEG-UNL
Use: Motor fuel

Section G

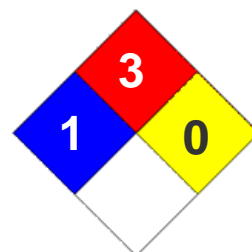
#1

Section 2: Product Composition

| Component | CAS Number | Amount (%) |
|------------------------------------|-------------------|-------------------|
| Gasoline | 86290-81-5 | 0 – 100 |
| Benzene | 71-43-2 | 0 – 5 |
| Toluene | 108-88-3 | 0 – 30 |
| Xylene (all isomers) | 1330-20-7 | 0 – 25 |
| Hexane (other isomers) | Mixture | 5 – 25 |
| n-Hexane | 110-54-3 | 0 – 3 |
| Cyclohexane | 110-82-7 | 0 – 3 |
| Octanes (all isomers) | Mixture | 0 – 20 |
| Heptane (all isomers) | 142-82-5 | 0 – 15 |
| Ethanol | 64-17-5 | 0 – 10 |
| Pentanes (all isomers) | Mixture | 0 – 20 |
| Trimethylbenzenes (all isomers) | 95-63-6 | 0 – 5 |
| Ethylbenzene | 100-41-4 | 0 – 5 |
| Cumene | 98-82-8 | 0 – 5 |
| Methyl Tertiary Butyl Ether (MTBE) | 1634-04-4 | 0 – 16 |
| Tertiary Amyl Methyl Ether (TAME) | 994-05-8 | 0 – 6 |

Section 3: Hazards Identification**Emergency Overview****DANGER!**

Extremely Flammable liquid and vapor
Harmful if swallowed
Skin Irritant
May cause eye and respiratory irritation
Cancer Hazard – Contains material which can cause cancer

Hazard Rankings**NFPA**

Physical form: Liquid
Appearance: Clear to amber
Odor: Strong, Gasoline

Potential Health Effects

Eyes: Contact with eyes may cause irritation, redness, tearing, stinging, watering and blurred vision.

Skin: Contact with skin may cause irritation, itching, redness and skin dryness. Prolonged or repeated contact may cause drying and cracking of the skin, and may also cause dermatitis and inflammation. (See also section 11).

Inhalation: Breathing high concentration can be harmful. Throat and lung irritation may occur. Central nervous system effects including nausea, euphoria, dizziness, headache, fatigue, drowsiness or unconsciousness may occur due to long term or high concentration exposure to vapors.

Ingestion: Toxic if swallowed. This product may cause nausea, vomiting, dizziness, drowsiness, diarrhea if swallowed. Central nervous system effects may be caused. Swallowing this product can result in severe lung damage and/or death.

Signs / Symptoms: When overexposed to this product effects such as nausea, vomiting, blurred vision, respiratory failure, central nervous system depression, unconsciousness, tremor, death may occur.

See toxicological Information (section 11)

Section G
#1

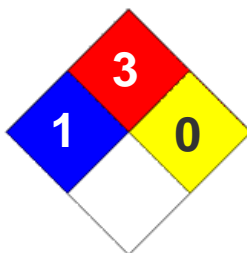
Section 4: First Aid Measures

| | |
|--------------------------------|--|
| Eye contact: | Flush eyes immediately with fresh, cool water for at least 15 minutes. If irritation or redness or any symptoms persist, seek medical attention. |
| Skin contact: | Remove contaminated clothes and shoes. Flush affected area with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, wash affected area thoroughly with soap and water. If irritation or redness develops, seek medical attention. |
| Inhalation (Breathing): | If inhaled, immediately move person to fresh air. If there is difficulty breathing, give oxygen. If not breathing, immediately give artificial respiration. Seek medical attention. |
| Ingestion (Swallowing): | This product may be harmful or fatal if swallowed. This product may cause nausea, vomiting, diarrhea and restlessness. Do not induce vomiting. Do not give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is unconscious or drowsy, place on the left side with the head down. Seek immediate medical attention. |
| Notes to Physician: | <p>This material sensitizes the heart to the effects of sympathomimetic amines. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in individuals exposed to this material.</p> <p>Inhalation overexposure can produce toxic effects. Monitor respiratory distress. If difficulty in breathing evaluate upper respiratory tract inflammation, bronchitis and pneumonitis. Administer supplemental oxygen as required.</p> <p>If ingested, this material presents a significant aspiration and chemical pneumonitis hazard. Consider activated charcoal and/or gastric lavage. If patient is obtunded, protect the airway by cuffed endotracheal intubation or by placement of the body in a Trendelenburg and left lateral decubitus position.</p> |

Section G**#1**

Section 5: Fire Fighting Measures

NFPA Hazard Class: Health = 1 ; Flammability = 3 ; Instability = 0
(0 – Minimal ; 1 – Slight ; 2 – Moderate ; 3 – Serious ; 4 – Severe)



Auto – ignition temperature : >260 °C (500 °F)

Flash point : Closed cup: -43 °C (-45 °F)

Flammable limits : Lower: approximately 1.4%
Upper: approximately 7.6%

Products of combustion : Carbon monoxide, carbon dioxide, nitrogen and sulfur oxides, smoke, fumes, unburned hydrocarbons and other products of incomplete combustion.

Special properties : Flammable liquid! This material can be ignited by heat, sparks, flames or other sources of ignition. Vapors may travel long distances to a source where they can ignite and flash back, or explode. A mixture of vapor and air can create an explosion hazard in confined spaces. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing media : Use of dry chemical, carbon dioxide, or foam is recommended to extinguish fire. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may not extinguish the fire, unless it is used by experienced fire fighters and under favorable conditions.

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 G
#1

Section 6: Accidental Release Measures

| | |
|-----------------------------------|--|
| Personal precautions: | This material is extremely flammable. Eliminate all ignition sources. Keep all hot metal surfaces away from spill/release. All equipment used when handling this material must be grounded. |
| Spill precautions: | Stay upwind and away from spill. Notify persons down wind of the spill, isolate spill area and keep unauthorized personnel out. If it can be done with minimal risk, try to stop spill. Always wear protective equipment, including respiratory protection. Contact emergency personnel. |
| Environmental precautions: | Prevent spilled material from entering sewers, drains, soil, and natural waterways. Use foam or spills to minimize vapors (section 5). Spilled material may be absorbed into an appropriate absorbent material. |
| Methods for cleaning up: | Notify fire authorities and appropriate federal, state and local agencies. Immediate cleanup is recommended. |

Section 7: Handling and Storage**Section G****#1**

| | |
|------------------|--|
| Handling: | Flammable liquid and vapor. To be used only as a motor fuel. Avoid inhalation of vapors and contact with skin. Wash hands thoroughly after handling this material. Use in a well ventilated area away from all ignition sources. Use product with caution around heat, sparks, static electricity and open flames. Static electricity may ignite vapors and cause fire. Empty containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks or other ignition sources. The may explode and cause injury and/or death. Empty drums should be completely drained, properly bunged, and returned promptly to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. |
| Storage: | Store in approved containers only. Keep in tightly closed containers in cool, dry, well ventilated areas. Keep isolated away from heat, sources of ignition and hot metal surfaces. |

Section 8: Exposure Controls / Personal Protection

Engineering controls: Provide ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below their occupational exposure limits. Eyewash stations and safety showers should be located near the work-station.

Personal Protection

Eye Protection: Keep away from eyes. Safety glasses complying with approved standards should be worn. Chemical type goggles should be worn.

Skin Protection: Keep away from skin. Skin protection should be worn. Chemical resistant, impervious gloves should be worn. Always follow good personal hygiene practices after handling the material.

Respiratory Protection: Approved respiratory equipment must be used if a risk assessment indicates it is necessary. If workplace exposure limits for product or components are exceeded, NIOSH approved equipment should be worn.

General Protection: Use this material in well ventilated areas. Ventilation equipment should be explosion proof also.

Section G**#1**

| Component | Applicable Workplace Exposure Limits |
|------------------------------------|---|
| Gasoline | ACGIH – TWA: 300 ppm (8 hours) STEL: 500 ppm (15 minutes) |
| Benzene | ACGIH – TWA: 0.5 ppm (8 hours) STEL: 2.5 ppm (15 minutes) OSHA – TWA: 1 ppm (8 hours) STEL: 5 ppm (15 minutes) |
| Toluene | ACGIH – TWA: 20 ppm (8 hours) OSHA – TWA: 200 ppm (8 hours) CEIL: 300 ppm PEAK: 500 ppm (10 minutes) |
| Xylene (all isomers) | ACGIH – TWA: 100 ppm (8 hours) STEL: 150 ppm (15 minutes) OSHA – TWA: 100 ppm (8 hours) |
| Hexane (other isomers) | ACGIH – TWA: 500 ppm (8 hours) STEL: 1000 ppm (15 minutes) |
| n-Hexane | ACGIH – TWA: 50 ppm (8 hours) OSHA – TWA: 500 ppm (8 hours) |
| Cyclohexane | ACGIH – TWA: 100 ppm (8 hours) OSHA – TWA: 300 ppm (8 hours) |
| Octanes (all isomers) | ACGIH – TWA: 300 ppm (8 hours) OSHA – TWA: 500 ppm (8 hours) |
| Heptane (all isomers) | ACGIH – TWA: 400 ppm (8 hours) STEL: 5000 ppm (15 minutes) OSHA – TWA: 500 ppm (8 hours) |
| Ethanol | ACGIH – TWA: 1000 ppm (8 hours) OSHA – TWA: 1000 ppm (8 hours) |
| Pentanes (all isomers) | ACGIH – TWA: 600 ppm (8 hours) OSHA – TWA: 1000 ppm (8 hours) |
| Trimethylbenzenes (all isomers) | ACGIH – TWA: 25 ppm (8 hours) |
| Ethylbenzene | ACGIH – TWA: 100 ppm (8 hours) STEL: 125 ppm (15 minutes) OSHA – TWA: 100 ppm (8 hours) |
| Cumene | ACGIH – TWA: 50 ppm (8 hours) OSHA – TWA: 50 ppm (8 hours) |
| Methyl Tertiary Butyl Ether (MTBE) | ACGIH – TWA: 50 ppm (8 hours) |
| Tertiary Amyl Methyl Ether (TAME) | ACGIH – TWA: 20 ppm (8 hours) |

Section G**#1**

Section 9: Physical and Chemical Properties

| | |
|------------------------------|---|
| Physical State: | Liquid. |
| Color: | Transparent, clear to amber liquid. |
| Odor: | Strong. Characteristic gasoline odor. |
| pH: | Not applicable |
| Boiling Point: | >26 °C (>78 °F) |
| Melting Point: | Not applicable. |
| Specific gravity: | 0.66 to 0.75 (Water = 1) |
| Vapor density: | 3 to 4 (Air = 1) |
| Vapor pressure: | 220-450 mm Hg at 20°C (68°F) / 6-15 Reid-psia at 37.8°C (100°F) |
| Volatility: | 720 – 770 g/l VOC (w/v) |
| Viscosity (at 40 °C): | < 1 |
| Flash Point: | < -45 °F / < 43°C |
| Bulk Density: | 6.0 – 6.4 lbs/gal |
| Solubility in water: | Negligible |

Section 10: Stability and Reactivity

| | |
|-----------------------------|--|
| Stability: | Stable. Extremely flammable liquid and vapor. Vapor can cause fire. |
| Conditions to avoid: | Keep away from heat, flame and all other possible sources of ignition. |

Materials to avoid: Keep away from strong oxidizing agents such as acids, chlorine, hydrogen peroxide and oxygen.

Hazardous decomposition products: Please refer to the combustion products identified in Section 5 of this MSDS.

Hazardous Polymerization: Not expected to occur.

Section G
#1

Section 11: Toxicological Information

Toxicology Information

Oral toxicity: Almost non-toxic. LD 50: > 2000 mg/kg (species: rats)
Dermal toxicity: Almost non-toxic. LD 50: > 2000 mg/kg (species: rabbits)
Inhalation toxicity: Almost non-toxic. LD 50: > 5 mg/l (species: rats)
Eye irritation: Almost non-irritating. Draize score: > 6 and < 15 (species: rabbits)
Skin irritation: Irritant. Primary irritation index: > 3 and < 5 (species: rabbits)

Other data: Inhalation of high concentrations of vapors or mists may cause respiratory system irritation and damage. It may also result in the damage and depression of the central nervous system and may cause death. Prolonged contact with the material may cause severe skin irritation.

Subchronic toxicity: Dermal studies resulted in significant irritation but not systematic toxicity (species: rabbits). Inhalation exposures (90 day, approximately 1500 ppm vapor) produced light hydrocarbon nephropathy but no significant systemic toxicity (species: rats).

Neurotoxicity: Repeated and prolonged exposures to high concentrations of vapor has been reported to result in central nervous system damage and eventually, death. In a study in which ten human volunteers were exposed for 30 minutes to approximately 200, 500 or 1000 ppm concentrations of gasoline vapor, irritation of the eyes was the only significant effect observed, based on both subjective and objective assessments. However, no persistent neurotoxic effects were observed in subchronic inhalation studies of gasoline.

Reproductive toxicity: An inhalation study with rats exposed to 0, 400 and 1600 ppm of wholly vaporized unleaded gasoline, 6 hours per day on day 6 through 16 of gestation, showed no teratogenic effects nor indication of toxicity to either the mother or the fetus. Another inhalation study in rats exposed to 3000, 6000, or 9000 ppm of gasoline vapor, 6 hours per day on day 6 through 20 of gestation, also showed no teratogenic effects nor indications of toxicity to either the mother or the fetus.

Chronic toxicity: A lifetime mouse skin painting study of unleaded gasoline applied at 50 microliters, three times weekly, resulted in some severe skin irritation and changes, but no statistically significant increase in skin cancer or cancer to any other organ. Lifetime inhalation of wholly vaporized unleaded gasoline over 2000 ppm has caused increased liver tumors in female mice and increased kidney tumors in male rats. The EPA has concluded that mechanism by which wholly vaporized unleaded gasoline causes kidney damage is unique to the male rat. The effects in that species (kidney damage and cancer) should not be used in human risk assessment.

Section G
#1

| | |
|--------------------------------------|--|
| Other toxic effects on humans | Extremely hazardous in case of ingestion. Very hazardous in case of eye contact. Hazardous in case of skin contact. Slightly hazardous in case of inhalation. |
| Carcinogenic effects: | Contains material that may cause cancer depending on the level and duration of exposure. |
| Target organs: | Contains material that may cause damage to humans organs such as (but not limited to) blood, kidneys, lungs, liver, eye, skin, nervous system and upper respiratory tract. |

Section 12: Ecological Information

| | |
|----------------------------|---|
| Ecotoxicity: | This material may be toxic to aquatic organisms such as algae and daphnia. It has also shown to be toxic to fish. |
| Environmental fate: | The material is expected to be readily biodegradable. When released into the environment, some of the constituents of gasoline will volatilize and be photo degraded in the atmosphere. Following spillage, the more volatile components of gasoline will be rapidly lost, with concurrent dissolution of these and other constituents into the water. Factors such as local environmental conditions, photo-oxidation, biodegradation and adsorption onto suspended sediments, can contribute to the weathering of spilled gasoline. |

Section G
#1

Section 13: Disposal Considerations

| | |
|------------------------|---|
| Waste disposal: | Avoid disposal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product and any of its by products should always comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. This material would likely be identified as a federally regulated RCRA hazardous waste. See sections 7 and 8 for further information on handling, storage and personal protection. See section 9 for the material's physical and chemical properties. |
|------------------------|---|

Section 14: Transportation Information

This material is U.S Department of Transportation (DOT) regulated material.

Shipping name: Gasoline, 3, UN 1203, PG II
Gasohol, 3, NA 1203, PG II (for gasoline blended with less than 20% ethanol).

Hazard class: 3 DOT Class: Flammable liquid

Packing Group: II

UN / NA Number: UN1203 / NA1203

Emergency Response Code: 128

Label:

**Section G**
#1**Section 15: Regulatory Information**

TSCA Inventory: This product and/or its components are listed on the Toxic Substances Control Act (TSCA)

**SARA 302 / 304:
Emergency planning and notification** The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and CFR 355. No components were identified.

**SARA 311 / 312:
Hazard identification** SARA Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under: Fire, Acute (immediate) Health Hazard, Chronic (Delayed) Health Hazard.

**CERCLA / SARA 313:
Toxic and chemical
notification and release
reporting**

This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372

| Component | CAS Number | Amount (%) |
|------------------------------------|-------------------|-------------------|
| Benzene | 71-43-2 | 0 – 5 |
| Toluene | 108-88-3 | 0 – 30 |
| Xylene (o, m, p isomers) | 1330-20-7 | 0 – 25 |
| n-Hexane | 110-54-3 | 0 – 3 |
| Cyclohexane | 110-82-7 | 0 – 3 |
| 1, 2, 4 Trimethylbenzenes | 95-63-6 | 0 – 5 |
| Ethylbenzene | 100-41-4 | 0 – 5 |
| Cumene | 98-82-8 | 0 – 5 |
| Methyl Tertiary Butyl Ether (MTBE) | 1634-04-4 | 0 – 16 |

California Proposition 65: This material may contain detectable quantities of the following chemicals known to the State of California to cause cancer, birth defects or other reproductive harm, and which may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Benzene (CAS NO. 71-43-3)

Toluene (CAS No. 108-88-3)

Ethylbenzene (CAS No. 100-41-4)

Naphthalene (CAS No. 91-20-3)

Canadian Regulations:

WHMIS Hazard Class: B2 – Flammable Liquids
D2A – Very Toxic Material

Section G**#1**

Section 16: Other Information

Issue date: March 5, 2008
Previous issue date: No previous date
Version: 1
MSDS Code: PEG-UNL

Legend:

ACGIH = American Conference of Governmental Industrial Hygienists
CAS = Chemical Abstracts Service Registry
CEIL = Ceiling Limit
CERCLA = The Comprehensive Environmental Response, Compensation and Liability Act
EPA = Environmental Protection Agency
NFPA = National Fire Protection Association
OSHA = Occupational Safety and Health Administration
SARA = Superfund Amendments and Reauthorization Act
STEL = Short Term Exposure Limit (15 minutes)
TWA = Time Weighted Average (8 hours)
WHMIS = Worker Hazardous Materials Information System (Canada)

Disclaimer:

The information presented in this Material Safety Data Sheet (MSDS) is based on data believed to be accurate as of the issuance date of this MSDS. No warranty is expressed or implied for the accuracy or completeness of the above provided information. Petrocom Energy Group, LLC does not assume any liability for any damage or injury arising out of product use by others. The end user of the product has the responsibility for evaluating the accuracy of the data, and determining the safety, toxicity and suitability of the product under any conditions.

Section G
#1



EAGLE



MANUFACTURING COMPANY

WILLOUGHBY, OH. 44095

UL-500 SF TYPE I

Capacity: 1.19 L. (1.19 Gal.)

4.73 L. (1.25 Gal.)

See Eagle for replacement parts

UL-500-1-1-100-000

SAFETY

DANGER

Extremely flammable liquid or gas.

May ignite on contact with air.

Keep away from heat, open flame, sparks, etc.

Do not use in confined spaces.

Use only in well-ventilated areas.

Do not breathe vapors.

Do not get on skin or clothes.

Do not get in eyes.

Do not drink.

Do not eat.

Do not use near fire.

Do not use near electrical equipment.

Do not use near open flame.

Do not use near sparks.

Do not use near heat.



1. Product and company identification

| | |
|--------------------------------------|---|
| Product name | DIESEL FUEL NO. 2 |
| MSDS # | 11155 |
| Code | 11155 |
| Product use | Fuel. |
| Synonyms | Ultra Low Sulfur No. 2 Amoco Premier Diesel Fuel, Ultra Low Sulfur No. 2 Amoco Premier Diesel Fuel – Winterized, Ultra Low Sulfur No. 2 BP Supreme Diesel, Low Sulfur No. 2 BP Diesel Fuel, Ultra Low Sulfur No. 2 BP Diesel Fuel, Ultra Low Sulfur No. 2 BP Diesel Fuel – Winterized |
| Supplier | BP Products North America Inc. 150 West Warrenville Road Naperville, Illinois 60563-8460 USA |
| EMERGENCY HEALTH INFORMATION: | 1 (800) 447-8735 Outside the US: +1 703-527-3887 (CHEMTREC) |
| EMERGENCY SPILL INFORMATION: | 1 (800) 424-9300 CHEMTREC (USA) |
| OTHER PRODUCT INFORMATION | 1 (866) 4 BP - MSDS (866-427-6737 Toll Free - North America) email: bpcares@bp.com |

2. Hazards identification

| | |
|---------------------------------|--|
| Physical state | Liquid. |
| Color | Colorless. to Various Colors. (May be dyed Red., Light Green. ,Yellow.) |
| Emergency overview | <p>WARNING !</p> <p>COMBUSTIBLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED. ASPIRATION HAZARD. HARMFUL OR FATAL IF LIQUID IS ASPIRATED INTO LUNGS. MAY CAUSE RESPIRATORY TRACT IRRITATION. INHALATION CAUSES HEADACHES, DIZZINESS, DROWSINESS, AND NAUSEA, AND MAY LEAD TO UNCONSCIOUSNESS.</p> <p>Combustible liquid. Harmful if swallowed. Aspiration hazard if swallowed. Can enter lungs and cause damage. Keep away from heat, sparks and flame. Avoid exposure - obtain special instructions before use. Do not breathe vapor or mist. Do not ingest. If ingested, do not induce vomiting. Avoid contact with eyes, skin and clothing. Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.</p> |
| Routes of entry | Dermal contact. Eye contact. Inhalation. Ingestion. |
| Potential health effects | |
| Eyes | Slightly irritating to the eyes. |
| Skin | Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis. |
| Inhalation | May cause respiratory tract irritation. Inhalation causes headaches, dizziness, drowsiness and nausea and may lead to unconsciousness. See toxicological information (section 11). |

Section G

#2

| | | | | | |
|---------------------|-------------------|----------------------|-------------|-----------------|-----------|
| Product name | DIESEL FUEL NO. 2 | Product code | 11155 | Page: | 1/8 |
| Version | 2 | Date of issue | 07/20/2010. | Format | US-COMP |
| | | | | Language | ENGLISH. |
| | | | | | (US-COMP) |
| | | | | | (ENGLISH) |

Ingestion Harmful if swallowed. Aspiration hazard if swallowed. Can enter lungs and cause damage. See toxicological information (section 11).

See toxicological information (section 11)

3. Composition/information on ingredients

| Ingredient name | CAS # | % |
|---|-------------|----------|
| Petroleum distillates (Diesel Fuel No. 2) | 68476-34-6 | 95 - 100 |
| Contains one or more of the following biodiesels: | Varies | 0 - 5 |
| soybean oil, me ester | 67784-80-9 | . |
| Fatty acids, sunflower-oil, Me esters | 68919-54-0 | . |
| Fatty acids methyl esters | 67762-38-3 | . |
| Fatty acids, vegetable-oil, Methyl esters | 68990-52-3 | . |
| rape oil, me ester | 73891-99-3 | . |
| Fatty acids, canola-oil, Me esters | 129828-16-6 | . |
| fatty acids, tallow, me esters | 61788-61-2 | . |
| Contains: | | |
| Naphthalene | 91-20-3 | 1 - 3 |
| May also contain small quantities of proprietary performance additives. | | |

4. First aid measures

| | |
|--------------|--|
| Eye contact | In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention. |
| Skin contact | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if irritation develops. |
| Inhalation | If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately. |
| Ingestion | Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately. |

5. Fire-fighting measures

Section G
#2

| | |
|--------------------------------|--|
| Flammability of the product | Combustible liquid. |
| Auto-ignition temperature | 257°C (494°F) |
| Flash point | Closed cup: >38°C (>100.4°F) [Pensky-Martens.] |
| Explosion limits | Lower: 0.6% Upper: 7.5% |
| Fire/explosion hazards | Combustible liquid and vapor. Vapor may cause flash fire. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. |
| Unusual fire/explosion hazards | Explosive in the presence of the following materials or conditions: open flames, sparks and static discharge and heat. |
| Extinguishing media | |
| Suitable | In case of fire, use water fog, foam, dry chemicals, or carbon dioxide. |
| Not suitable | Do not use water jet. |
| Fire-fighting procedures | 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. |
| Hazardous combustion products | Combustion products may include the following: carbon oxides (CO, CO ₂) (carbon monoxide, carbon dioxide) |
| Protective clothing (fire) | |

| | | | | | |
|--------------|-------------------|---------------|-------------|-----------|-----------|
| Product name | DIESEL FUEL NO. 2 | Product code | 11155 | Page: | 2/8 |
| Version | 2 | Date of issue | 07/20/2010. | Format | US-COMP |
| | | | | (US-COMP) | Language |
| | | | | | ENGLISH. |
| | | | | | (ENGLISH) |

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Do not use water jet.

Special remarks on fire hazards

6. Accidental release measures

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).

Personal protection in case of a large spill

Chemical splash goggles. Chemical-resistant protective suit. Boots. Chemical-resistant gloves. Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product. Suggested protective clothing might not be adequate. Consult a specialist before handling this product. CAUTION: The protection provided by air-purifying respirators is limited. Use a positive pressure air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are not known, or if concentrations exceed the protection limits of air-purifying respirator.

Methods for cleaning up

Large spill

Stop leak if without risk. Eliminate all ignition sources. Move containers from spill area. 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). Use spark-proof tools and explosion-proof equipment. 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.

Small spill

Stop leak if without risk. Eliminate all ignition sources. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

7. Handling and storage

Handling

Do not ingest. Never siphon by mouth. If ingested, do not induce vomiting. Put on appropriate personal protective equipment (see section 8). Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Use and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material.

Storage

Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10). 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.

8. Exposure controls/personal protection

Occupational exposure limits

Ingredient name

Petroleum distillates

Naphthalene

Occupational exposure limits

ACGIH TLV (United States). Absorbed through skin.

TWA: 100 mg/m³, (measured as total hydrocarbons) 8 hour(s). Issued/Revised: 1/2002 Form: Total hydrocarbons

ACGIH TLV (United States).

STEL: 79 mg/m³ 15 minute(s). Issued/Revised: 5/1996

STEL: 15 ppm 15 minute(s). Issued/Revised: 5/1996

TWA: 52 mg/m³ 8 hour(s). Issued/Revised: 5/1996

TWA: 10 ppm 8 hour(s). Issued/Revised: 5/1996

OSHA PEL (United States).

TWA: 50 mg/m³ 8 hour(s). Issued/Revised: 6/1993

Product name DIESEL FUEL NO. 2

Product code 11155

Page: 3/8

Version 2 **Date of issue** 07/20/2010.

Format US-COMP
(US-COMP)

Language ENGLISH.
(ENGLISH)

Section G

#2

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Some states may enforce more stringent exposure limits.

Control Measures

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.

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.

Personal protection

Eyes

Avoid contact with eyes. Safety glasses with side shields.

Skin and body

Avoid contact with skin and clothing. Wear suitable protective clothing.

Respiratory

Use only with adequate ventilation. Do not breathe vapor or mist. If ventilation is inadequate, use a NIOSH-certified respirator with an organic vapor cartridge and P95 particulate filter.

CAUTION: The protection provided by air-purifying respirators is limited. Use a positive pressure air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are not known, or if concentrations exceed the protection limits of air-purifying respirator.

Hands

Wear gloves that cannot be penetrated by chemicals or oil.

The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Consult your supervisor or Standard Operating Procedure (S.O.P) for special handling instructions.

9. Physical and chemical properties

Physical state

Liquid.

Color

Colorless. to Various Colors. (May be dyed Red., Light Green. ,Yellow.)

Odor

Petroleum

Flash point

Closed cup: >38°C (>100.4°F) [Pensky-Martens.]

Explosion limits

Lower: 0.6%
Upper: 7.5%

Auto-ignition temperature

257°C (494°F)

Specific gravity

<1 [Water = 1]

Density

820 to 875 kg/m³ (0.82 to 0.875 g/cm³)

Viscosity

Kinematic: 1.7 to 4.1 mm²/s (1.7 to 4.1 cSt) at 40°C

Solubility

negligible <0.1%

Section G

#2

10. Stability and reactivity

Stability and reactivity

Stable under recommended storage and handling conditions (see section 7).

Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid

Keep away from heat, sparks and flame. Avoid all possible sources of ignition (spark or flame).

Incompatibility with various substances

Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis. halogenated compounds.

Product name DIESEL FUEL NO. 2

Product code 11155

Page: 4/8

Version 2 **Date of issue** 07/20/2010.

Format US-COMP
(US-COMP)

Language ENGLISH.
(ENGLISH)

| | |
|---|--|
| Hazardous decomposition products | carbon oxides (CO, CO ₂) (carbon monoxide, carbon dioxide) |
| Hazardous polymerization | Under normal conditions of storage and use, hazardous polymerization will not occur. |

11. Toxicological information

Acute toxicity

Classification

| Product/ingredient name | IARC | NTP | OSHA |
|---|---------|---------------|--------|
| Naphthalene fuel, diesel no. 2 | 2B 3 | Possible - | - - |
| IARC : 2B - Possible carcinogen to human. 3 - Not classifiable as a human carcinogen. | | | |
| NTP : Possible - Reasonably anticipated to be human carcinogens. | | | |

Other Toxicity Data

Aspiration of this product into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this product. Do not siphon by mouth.

Middle distillate: From skin-painting studies of petroleum distillates of similar composition and distillate range, it has been shown that these types of materials often possess weak carcinogenic activity in laboratory animals. In these tests, the material is painted on the shaved backs of mice twice a week for their lifetime. The material is not washed off between applications. Therefore, there may be a potential risk of skin cancer from prolonged or repeated skin contact with this product in the absence of good personal hygiene. This particular product has not been tested for carcinogenic activity, but we have chosen to be cautious in light of the findings with other distillate streams.

Occasional skin contact with this product is not expected to have serious effects, but good personal hygiene should be practiced and repeated skin contact avoided. This product can also be expected to produce skin irritation upon prolonged or repeated skin contact. Personal hygiene measures taken to prevent skin irritation are expected to be adequate to prevent risk of skin cancer.

Diesel exhaust particulates have been classified by the National Toxicological Program (NTP) to be a reasonably anticipated human carcinogen. Exposure should be minimized to reduce potential risk.

Naphthalene has been reported to cause developmental toxicity in mice after oral exposure to relatively high dose levels, but developmental toxicity was not observed in NTP (National Toxicology Program) sponsored studies in rats and rabbits. Ingestion or inhalation of naphthalene can result in hemolysis and other blood abnormalities, and individuals (and infants) deficient in glucose-6-phosphate dehydrogenase may be especially susceptible to these effects. Inhalation of naphthalene may cause headache and nausea. Airborne exposure can result in eye irritation. Naphthalene exposure has been associated with cataracts in animals and humans.

Other information

Potential chronic health effects

| | |
|------------------------|---|
| Carcinogenicity | Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure. |
|------------------------|---|

12. Ecological information

Ecotoxicity

No testing has been performed by the manufacturer.

| | |
|----------------------------------|---|
| Mobility | Spillages may penetrate the soil causing ground water contamination. |
| Bioaccumulative potential | This product is not expected to bioaccumulate through food chains in the environment. |

| | | |
|---------------------------------------|----------------------------------|---------------------------------------|
| Product name DIESEL FUEL NO. 2 | Product code 11155 | Page: 5/8 |
| Version 2 | Date of issue 07/20/2010. | Format US-COMP (US-COMP) |
| | | Language ENGLISH. (ENGLISH) |

13. Disposal considerations

Waste information

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

NOTE: The generator of waste has the responsibility for proper waste identification (based on characteristic(s) or listing), transportation and disposal

14. Transport information

International transport regulations

| Regulatory information | UN number | Proper shipping name | Class | Packing group | Additional information |
|--------------------------|-----------|----------------------|-------|---------------|---|
| DOT Classification | NA 1993 | Diesel fuel | 3 | III | - |
| TDG Classification | UN 1202 | Gas oil | 3 | III | - |
| IMDG Classification | UN 1202 | Gas oil | 3 | III | Remarks Marine pollutant |
| IATA/ICAO Classification | UN 1202 | Gas oil | 3 | III | Remarks Environmentally hazardous substance mark. |

Section G

#2

15. Regulatory information

U.S. Federal Regulations

United States inventory (TSCA 8b)

All components are listed or exempted.

TSCA 12(b) one-time export: Naphthalene

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: Naphthalene

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: DIESEL FUEL NO. 2: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

SARA 313

| | Product name | CAS number | Concentration |
|--|--|------------|-----------------|
| Form R - Reporting requirements | Naphthalene | 91-20-3 | 1.0035 - 3.0111 |
| Supplier notification | Naphthalene | 91-20-3 | 1.0035 - 3.0111 |
| CERCLA Sections 102a/103 Hazardous Substances (40 CFR Part 302.4): | CERCLA: Hazardous substances.: o-Xylene: 1000 lbs. (454 kg); Naphthalene: 100 lbs. (45.4 kg); benzo[def]chrysene: 1 lb. (0.454 kg); Ethylbenzene: 1000 lbs. (454 kg); xylene: 100 lbs. (45.4 kg); Cumene: 5000 lbs. (2270 kg); Phenol: 1000 lbs. (454 kg); Benzene: 10 lbs. (4.54 kg); Alkylaryl sulfonic acid: 1000 lbs. (454 kg); Toluene: 1000 lbs. (454 kg); Methanol: 5000 lbs. (2270 kg); 2-Butoxyethanol; | | |

State regulations

| | | | | | |
|--------------|-------------------|---------------|-------------|----------|-----------|
| Product name | DIESEL FUEL NO. 2 | Product code | 11155 | Page: | 6/8 |
| Version | 2 | Date of issue | 07/20/2010. | Format | US-COMP |
| | | | (US-COMP) | Language | ENGLISH. |
| | | | | | (ENGLISH) |

Massachusetts
Substances

New Jersey Hazardous
Substances

Pennsylvania RTK
Hazardous Substances

California Prop. 65

The following components are listed: NAPHTHALENE

The following components are listed: DIESEL FUEL; # 2 HEATING OIL; NAPHTHALENE; MOTH FLAKES

The following components are listed: NAPHTHALENE

WARNING: This product contains a chemical known to the State of California to cause cancer. Naphthalene; Ethylbenzene; benzo[def]chrysene

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Toluene

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. Benzene

Prop 65 chemicals will result under certain conditions from the use of this material. For example, burning fuels produces combustion products including diesel exhaust, a Prop 65 carcinogen, and carbon monoxide, a Prop 65 reproductive toxin.

Inventories

| | |
|-------------------------------|---------------------------------------|
| Canada inventory | Not determined. |
| Europe inventory | At least one component is not listed. |
| Australia inventory (AICS) | At least one component is not listed. |
| China inventory (IECSC) | Not determined. |
| Japan inventory (ENCS) | At least one component is not listed. |
| Korea inventory (KECI) | At least one component is not listed. |
| Philippines inventory (PICCS) | At least one component is not listed. |

16. Other information

Label requirements

WARNING !

COMBUSTIBLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FLASH FIRE.
HARMFUL IF SWALLOWED.
ASPIRATION HAZARD.
HARMFUL OR FATAL IF LIQUID IS ASPIRATED INTO LUNGS.
MAY CAUSE RESPIRATORY TRACT IRRITATION.
INHALATION CAUSES HEADACHES, DIZZINESS, DROWSINESS, AND NAUSEA, AND MAY LEAD TO UNCONSCIOUSNESS.

Section G

#2

| | | |
|----------------|-----------------------|---|
| HMIS® Rating : | Health * 1 | National Fire Protection Association (U.S.A.) |
| | Flammability 2 | |
| | Physical 0 | |
| | Hazard | |
| | Personal protection X | |



| | |
|------------------------|---------------------|
| History | |
| Date of issue | 07/20/2010. |
| Date of previous issue | 07/20/2010. |
| Prepared by | Product Stewardship |
| Notice to reader | |

| | | | | | |
|--------------|-------------------|---------------|-------------|-----------|-------------------|
| Product name | DIESEL FUEL NO. 2 | Product code | 11155 | Page: | 7/8 |
| Version | 2 | Date of issue | 07/20/2010. | Format | US-COMP |
| | | | | (US-COMP) | Language ENGLISH. |
| | | | | | (ENGLISH) |

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from us.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken.

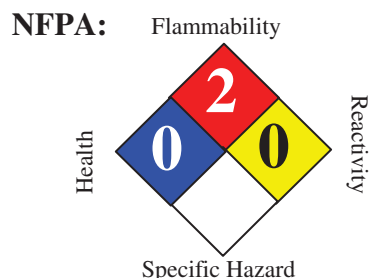
Section G

#2

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|--------------|-------------------|---------------|-------------|----------|-----------|
| Product name | DIESEL FUEL NO. 2 | Product code | 11155 | Page: | 8/8 |
| Version | 2 | Date of issue | 07/20/2010. | Format | US-COMP |
| | | | (US-COMP) | Language | ENGLISH. |
| | | | | | (ENGLISH) |

Material Safety Data Sheet

Diesel Low Sulfur (LSD) and Ultra Low Sulfur Diesel (ULSD)



HMIS III:

| | |
|--------------|---|
| HEALTH | 1 |
| FLAMMABILITY | 2 |
| PHYSICAL | 0 |

0 = Insignificant, 1 = Slight, 2 = Moderate, 3 = High, 4 = Extreme

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

| | | | | | |
|--------------------------------|---|--|---|---|----------------|
| Product name | : | Diesel Low Sulfur (LSD) and Ultra Low Sulfur Diesel (ULSD) | | | |
| Synonyms | : | CARB Diesel, 888100004478 | | | |
| MSDS Number | : | 888100004478 | Version | : | 2.19 |
| Product Use Description | : | Fuel | | | |
| Company | : | For: Tesoro Refining & Marketing Co. 19100 Ridgewood Parkway, San Antonio, TX 78259 | | | |
| Tesoro Call Center | : | (877) 783-7676 | Chemtrec (Emergency Contact) | : | (800) 424-9300 |

Section G

#3

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

| | |
|--------------------------|---|
| Regulatory status | : This material is considered hazardous by the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200). |
| Signal Word | : WARNING |
| Hazard Summary | : Toxic. Combustible Liquid |

Potential Health Effects

| | |
|-------------------|---|
| Eyes | : Eye irritation may result from contact with liquid, mists, and/or vapors. |
| Inhalation | : Vapors or mists from this material can irritate the nose, throat, and lungs, and can cause signs and symptoms of central nervous system depression, depending on the concentration and duration of exposure. |
| Skin | : Skin irritation leading to dermatitis may occur upon prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed. Long-term, repeated skin contact may cause skin cancer |
| Ingestion | : Harmful or fatal if swallowed. Do NOT induce vomiting. This material can irritate the mouth, throat, stomach, and cause nausea, vomiting, diarrhea and restlessness Aspiration hazard if liquid is inhaled into lungs, particularly from vomiting after ingestion. Aspiration may result in chemical pneumonia, severe lung damage, respiratory failure and even death. |

Target Organs : Central nervous system, Eyes, Skin, Kidney, Liver

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | CAS-No. | Weight % |
|---|------------|----------------|
| Fuels, diesel, No 2; Gasoil - unspecified | 68476-34-6 | 100% |
| Nonane | 111-84-2 | 0 - 5% |
| Naphthalene | 91-20-3 | 0 - 1% |
| 1,2,4-Trimethylbenzene | 95-63-6 | 0 - 2% |
| Xylene | 1330-20-7 | 0 - 2% |
| Sulfur | 7704-34-9 | 15 ppm maximum |

SECTION 4. FIRST AID MEASURES

| | |
|---------------------------|--|
| Inhalation | : Move to fresh air. Give oxygen. If breathing is irregular or stopped, administer artificial respiration. Seek medical attention immediately. |
| Skin contact | : Take off all contaminated clothing immediately. Wash off immediately with soap and plenty of water. Wash contaminated clothing before re-use. If skin irritation persists, seek medical attention immediately. |
| Eye contact | : Remove contact lenses. Rinse thoroughly with plenty of water for at least 15 minutes. If symptoms persist, seek medical attention. |
| Ingestion | : Do not induce vomiting without medical advice. If a person vomits when lying on his back, place him in the recovery position. Seek medical attention immediately. |
| Notes to physician | : Symptoms: Dizziness, Discomfort, Headache, Nausea, Disorder, Vomiting, Lung edema, Aspiration may cause pulmonary edema and pneumonitis, Liver disorders, Kidney disorders. |

Section G
#3

SECTION 5. FIRE-FIGHTING MEASURES

| | |
|--|---|
| Form | : Liquid |
| Flash point | : 38°C Minimum for #1 Diesel, 52°C Minimum for #2 Diesel |
| Auto Ignition temperature | : 257 °C (495 °F) |
| Lower explosive limit | : 0.6 %(V) |
| Upper explosive limit | : 4.7 %(V) |
| Suitable extinguishing media | : Carbon dioxide (CO ₂), Water spray, Dry chemical, Foam, Keep containers and surroundings cool with water spray. |
| Specific hazards during fire fighting | : Fire Hazard Do not use a solid water stream as it may scatter and spread fire. Cool closed containers exposed to fire with water spray. |

| | |
|---|---|
| Special protective equipment for fire-fighters | : Wear self-contained breathing apparatus and protective suit. Use personal protective equipment. |
| Further information | : Exposure to decomposition products may be a hazard to health. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam. |

SECTION 6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|---|
| Personal precautions | : Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to contain spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact. Ensure adequate ventilation. Use personal protective equipment. |
| Environmental precautions | : Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection. Discharge into the environment must be avoided. If the product contaminates rivers and lakes or drains inform respective authorities. |
| Methods for cleaning up | : Take up with sand or oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal - caution, flammable vapors may accumulate in closed containers. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8). |

Section G

#3

SECTION 7. HANDLING AND STORAGE

| | |
|--|--|
| Handling | : Keep away from fire, sparks and heated surfaces. No smoking near areas where material is stored or handled. The product should only be stored and handled in areas with intrinsically safe electrical classification. |
| Advice on protection against fire and explosion | : Hydrocarbon liquids including this product can act as a non-conductive flammable liquid (or static accumulators), and may form ignitable vapor-air mixtures in storage tanks or other containers. Precautions to prevent static-initated fire or explosion during transfer, storage or handling, include but are not limited to these examples: <ol style="list-style-type: none">(1) Ground and bond containers during product transfers. Grounding and bonding may not be adequate protection to prevent ignition or explosion of hydrocarbon liquids and vapors that are static accumulators.(2) Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil or diesel) is loaded into tanks previously containing low flash point products (such as gasoline or naphtha).(3) Storage tank level floats must be effectively bonded. For more information on precautions to prevent static-initated fire or explosion, see NFPA 77, Recommended Practice on Static Electricity (2007), and API |

Recommended Practice 2003, Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents (2008).

Dust explosion class : Not applicable

Requirements for storage areas and containers : Keep away from flame, sparks, excessive temperatures and open flame. Use approved containers. Keep containers closed and clearly labeled. Empty or partially full product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose containers to sources of ignition. Store in a well-ventilated area. The storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

Other data : Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure.

Advice on common storage Keep away from food, drink and animal feed. Incompatible with oxidizing agents. Incompatible with acids.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Section G

Exposure Guidelines

#3

| List | Components | CAS-No. | Type: | Value |
|---------|-------------|------------|-------|-------------------|
| OSHA Z1 | Xylene | 1330-20-7 | PEL | 100 ppm 435 mg/m3 |
| | Naphthalene | 91-20-3 | PEL | 10 ppm 50 mg/m3 |
| ACGIH | Diesel Fuel | 68476-30-2 | TWA | 100 mg/m3 |
| | Xylene | 1330-20-7 | TWA | 100 ppm |
| | | 1330-20-7 | STEL | 150 ppm |
| | Naphthalene | 91-20-3 | TWA | 10 ppm |
| | | 91-20-3 | STEL | 15 ppm |
| | Nonane | 111-84-2 | TWA | 200 ppm |

Engineering measures : Use adequate ventilation to keep gas and vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Use only intrinsically safe electrical equipment approved for use in classified areas.

Eye protection : Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

Hand protection : Gloves constructed of nitrile, neoprene, or PVC are recommended. Consult manufacturer specifications for further information.

Skin and body protection : If needed to prevent skin contact, chemical protective clothing such as of DuPont

TyChem®, Saranex or equivalent recommended based on degree of exposure. The resistance of specific material may vary from product to product as well as with degree of exposure.

| | |
|---------------------------------|--|
| Respiratory protection | : A NIOSH/ MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection. Use a NIOSH/ MSHA-approved positive-pressure supplied-air respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection. |
| Work / Hygiene practices | : Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves. |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**Section G**

| | |
|----------------------------------|--|
| Form | : Liquid |
| Appearance | : Clear, straw colored |
| Odor | : Characteristic petroleum (kerosene) odor |
| Flash point - typical | : 38 °C Minimum for #1 Diesel, 52 °C Minimum for #2 Diesel |
| Auto Ignition temperature | : 257 °C (495 °F) |
| Thermal decomposition | : No decomposition if stored and applied as directed. |
| Lower explosive limit | : 0.6 %(V) |
| Upper explosive limit | : 4.7 %(V) |
| pH | : Not applicable |
| Freezing point | : No data available |
| Boiling point | : 154 - 372 °C(310° - 702 °F) |
| Vapor Pressure | : < 2 mm Hg at 20 °C |
| Density | : 0.86 g/cm3 |
| Water solubility | : Negligible |
| Viscosity, dynamic | : 1.7 - 40 mPa.s at 37.8 °C (100.0 °F) |

#3

Percent Volatiles : 100 %

Conductivity
(conductivity can be reduced
by environmental factors such
as a decrease in temperature

Diesel Fuel Oils at terminal load rack: At least 25 pS/m
Ultra Low Sulfur Diesel (ULSD) without conductivity additive: 0 pS/m to 5 pS/m
ULSD at terminal load rack with conductivity additive: At least 50 pS/m but
conductivity may decrease from environmental factors such as temperature drop.
JP-8 at terminal load rack: 150 pS/m to 600 pS/m

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid : Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Keep away from strong oxidizers. Viton® ; Fluorel®

Materials to avoid : Strong oxidizing agents. Peroxides

Hazardous decomposition products : Carbon monoxide, carbon dioxide and noncombusted hydrocarbons (smoke). Diesel exhaust particulates may be a lung hazard - see Section 11.

Thermal decomposition : No decomposition if stored and applied as directed.

Hazardous reactions : Keep away from oxidizing agents, and acidic or alkaline products.

SECTION 11. TOXICOLOGICAL INFORMATION

Carcinogenicity

NTP : Naphthalene (CAS-No.: 91-20-3)

IARC : Naphthalene (CAS-No.: 91-20-3)

OSHA : No component of this product which is present at levels greater than or equal to 0.1 % is identified as a carcinogen or potential carcinogen by OSHA.

CA Prop 65 : WARNING! This product contains a chemical known to the State of California to cause cancer.
naphthalene (CAS-No.: 91-20-3)

Skin irritation : Irritating to skin.

Eye irritation : Irritating to eyes.

Further information : Studies have shown that similar products produce skin cancer or skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation. Positive mutagenicity results have been reported. Repeated over-exposure may cause liver and kidney injury IARC classifies whole diesel fuel exhaust particulates as probably carcinogenic to humans (Group 2A). NIOSH regards whole diesel fuel exhaust particulates as a potential cause of occupational lung cancer based on animal studies and limited evidence in humans.

Component:

Fuels, diesel, No 2; Gasoil - unspecified

68476-34-6

Acute oral toxicity: LD50 rat
Dose: 5,001 mg/kg

Acute dermal toxicity: LD50 rabbit

Section G
#3

Dose: 2,001 mg/kg

Acute inhalation toxicity: LC50 rat

Dose: 7.64 mg/l

Exposure time: 4 h

Skin irritation: Classification: Irritating to skin.

Result: Severe skin irritation

Eye irritation: Classification: Irritating to eyes.

Result: Mild eye irritation

Nonane

111-84-2

Acute oral toxicity: LD50 mouse

Dose: 218 mg/kg

Acute inhalation toxicity: LC50 rat

Exposure time: 4 h

Naphthalene

91-20-3

Acute oral toxicity: LD50 rat

Dose: 2,001 mg/kg

Acute dermal toxicity: LD50 rat

Dose: 2,501 mg/kg

Acute inhalation toxicity: LC50 rat

Dose: 101 mg/l

Exposure time: 4 h

Skin irritation: Classification: Irritating to skin.

Result: Mild skin irritation

Eye irritation: Classification: Irritating to eyes.

Result: Mild eye irritation

Carcinogenicity: N11.00422130

1,2,4-Trimethylbenzene

95-63-6

Acute inhalation toxicity: LC50 rat

Dose: 18 mg/l

Exposure time: 4 h

Skin irritation: Classification: Irritating to skin.

Result: Skin irritation

Eye irritation: Classification: Irritating to eyes.

Result: Eye irritation

Xylene

1330-20-7

Acute oral toxicity: LD50 rat

Dose: 2,840 mg/kg

Acute dermal toxicity: LD50 rabbit

Dose: ca. 4,500 mg/kg

Acute inhalation toxicity: LC50 rat

Dose: 6,350 mg/l

Exposure time: 4 h

Skin irritation: Classification: Irritating to skin.

Result: Mild skin irritation

Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.

Eye irritation: Classification: Irritating to eyes.

Result: Mild eye irritation

Section G

#3

SECTION 12. ECOLOGICAL INFORMATION

Additional ecological : Keep out of sewers, drainage areas, and waterways. Report spills and releases, as

information

applicable, under Federal and State regulations.

Component:**Naphthalene**

91-20-3

Toxicity to algae:

EC50

Species:

Dose: 33 mg/l

Exposure time: 24 h

1,2,4-Trimethylbenzene

95-63-6

Toxicity to fish:

LC50

Species: Pimephales promelas (fathead minnow)

Dose: 7.72 mg/l

Exposure time: 96 h

Acute and prolonged toxicity for aquatic invertebrates:

EC50

Species: Daphnia

Dose: 3.6 mg/l

Exposure time: 48 h

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal**

: In accordance with local and national regulations.

SECTION 14. TRANSPORT INFORMATION**CFR**

Proper shipping name : DIESEL FUEL
UN-No. : UN1202 (NA 1993)
Class : 3
Packing group : III

TDG

Proper shipping name : DIESEL FUEL
UN-No. : UN1202 (NA 1993)
Class : 3
Packing group : III

IATA Cargo Transport

UN UN-No. : UN1202 (NA 1993)
Description of the goods : DIESEL FUEL
Class : 3
Packaging group : III
ICAO-Labels : 3
Packing instruction (cargo aircraft) : 366
Packing instruction (cargo aircraft) : Y344

IATA Passenger Transport

UN UN-No. : UN1202 (NA 1993)
Description of the goods : DIESEL FUEL
Class : 3
Packaging group : III

Section G
#3

ICAO-Labels : 3
Packing instruction : 355
(passenger aircraft)
Packing instruction : Y344
(passenger aircraft)

IMDG-Code

UN-No. : UN 1202 (NA 1993)
Description of the goods : DIESEL FUEL
Class : 3
Packaging group : III
IMDG-Labels : 3
EmS Number : F-E S-E
Marine pollutant : No

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Combustible Liquid
Moderate skin irritant
Moderate eye irritant
Toxic by ingestion
POSSIBLE CANCER HAZARD

CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIRONMENT)

The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil. Fractions of crude oil, and products (both finished and intermediate) from the crude oil refining process and any indigenous components of such from the CERCLA Section 103 reporting requirements. However, other federal reporting requirements, including SARA Section 304, as well as the Clean Water Act may still apply.

TSCA Status : On TSCA Inventory
DSL Status : All components of this product are on the Canadian DSL list.
SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard
Chronic Health Hazard

SARA III 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

Components**CAS-No.**

Xylene 1330-20-7
1,2,4-Trimethylbenzene 95-63-6
Naphthalene 91-20-3

PENN RTK US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Components**CAS-No.**

Nonane 111-84-2

| | |
|---|------------|
| Naphthalene | 91-20-3 |
| 1,2,4-Trimethylbenzene | 95-63-6 |
| xylene | 1330-20-7 |
| Fuels, diesel, No 2; Gasoil - unspecified | 68476-34-6 |

MASS RTK US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

| <u>Components</u> | <u>CAS-No.</u> |
|------------------------|----------------|
| Xylene | 1330-20-7 |
| 1,2,4-Trimethylbenzene | 95-63-6 |
| Naphthalene | 91-20-3 |
| Nonane | 111-84-2 |

NJ RTK US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

| <u>Components</u> | <u>CAS-No.</u> |
|---|----------------|
| Nonane | 111-84-2 |
| Naphthalene | 91-20-3 |
| 1,2,4-Trimethylbenzene | 95-63-6 |
| Xylene | 1330-20-7 |
| Fuels, diesel, No 2; Gasoil - unspecified | 68476-34-6 |

California Prop. 65 : WARNING! This product contains a chemical known to the State of California to cause cancer.

Naphthalene 91-20-3

Section G**#3****SECTION 16. OTHER INFORMATION**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 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.

Template : GWU mbH
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Germany
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12/01/2011

1153, 1250, 1443, 1454, 1814, 1815, 1866, 1925

TurboTorch
Professional

MAP/Pro



100% Pure Propane
Net Weight 1.1 lb (0.5 kg)
Net Volume 0.25 cu ft (7.1 L)
UN 1959 3301 1.1 kg or 0.25 cu ft

Material Safety Data Sheet



MAPP GAS (Petroleum Gas, MAPD)

Section 1. Chemical product and company identification

| | |
|-------------------------------------|---|
| Product name | : MAPP GAS (Petroleum Gas, MAPD) |
| Supplier | : AIRGAS INC., on behalf of its subsidiaries 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253 |
| Product use | : Synthetic/Analytical chemistry. |
| Synonym | : MAP, MAPP, Methyacetylene-Propadiene, Mixture of Methylacetylene and Propadiene |
| MSDS # | : 002015 |
| Date of Preparation/Revision | : 4/1/2013. |
| In case of emergency | : 1-866-734-3438 |

Section 2. Hazards identification

| | |
|---|---|
| Physical state | : Gas. |
| Emergency overview | : DANGER! FLAMMABLE GAS. MAY CAUSE FLASH FIRE. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. CONTENTS UNDER PRESSURE. Keep away from heat, sparks and flame. Do not puncture or incinerate container. Contains material that can cause target organ damage. Use only with adequate ventilation. Keep container closed. Contact with rapidly expanding gases can cause frostbite. |
| Target organs | : Contains material which causes damage to the following organs: upper respiratory tract, skin, eyes. Contains material which may cause damage to the following organs: the nervous system, central nervous system (CNS). |
| Routes of entry | : Inhalation |
| Potential acute health effects | |
| Eyes | : Liquid or cold gas may cause frostbites. |
| Skin | : Liquid or cold gas may cause frostbites. |
| Inhalation | : Acts as a simple asphyxiant. |
| Ingestion | : Ingestion is not a normal route of exposure for gases |
| Potential chronic health effects | |
| Carcinogenicity | : See ACGIH Carcinogen classification. |
| Target organs | : Contains material which causes damage to the following organs: upper respiratory tract, skin, eyes. Contains material which may cause damage to the following organs: the nervous system, central nervous system (CNS). |
| Medical conditions aggravated by over-exposure | : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product. |

See toxicological information (Section 11)

Section G

#4

Section 3. Composition, Information on Ingredients

| <u>Name</u> | <u>CAS number</u> | <u>% Volume</u> | <u>Exposure limits</u> |
|-------------------------|-------------------|-----------------|--|
| Propylene | 115-07-1 | 40 - 50 | ACGIH TLV (United States, 2/2010). TWA: 500 ppm 8 hour(s). ACGIH TLV (United States, 1/2005). TWA: 500 ppm 8 hour(s). Form: All forms ACGIH TLV (United States, 2/2010). TWA: 1640 mg/m ³ 8 hour(s). TWA: 1000 ppm 8 hour(s). NIOSH REL (United States, 6/2009). TWA: 1650 mg/m ³ 10 hour(s). TWA: 1000 ppm 10 hour(s). OSHA PEL (United States, 11/2006). TWA: 1650 mg/m ³ 8 hour(s). TWA: 1000 ppm 8 hour(s). OSHA PEL 1989 (United States, 3/1989). TWA: 1650 mg/m ³ 8 hour(s). TWA: 1000 ppm 8 hour(s). |
| Methyl Acetylene | 74-99-7 | 27 - 33 | ACGIH TLV (United States, 2/2010). TWA: 1640 mg/m ³ 8 hour(s). TWA: 1000 ppm 8 hour(s). NIOSH REL (United States, 6/2009). TWA: 1650 mg/m ³ 10 hour(s). TWA: 1000 ppm 10 hour(s). OSHA PEL (United States, 11/2006). TWA: 1650 mg/m ³ 8 hour(s). TWA: 1000 ppm 8 hour(s). OSHA PEL 1989 (United States, 3/1989). TWA: 1650 mg/m ³ 8 hour(s). TWA: 1000 ppm 8 hour(s). |
| 1,2-Propadiene (Allene) | 463-49-0 | 13 - 15 | TLV (Philippines, 1/1978). TLV: 1800 mg/m ³ 8 hour(s). TLV: 1000 ppm 8 hour(s). Ministry of Labor (Republic of Korea, 6/2008). STEL: 1250 ppm 15 minute(s). STEL: 2250 mg/m ³ 15 minute(s). TWA: 1000 ppm 8 hour(s). TWA: 1800 mg/m ³ 8 hour(s). |
| Isobutane | 75-28-5 | 2 - 5 | ACGIH TLV (United States, 2/2010). TWA: 1000 ppm 8 hour(s). NIOSH REL (United States, 6/2009). TWA: 1900 mg/m ³ 10 hour(s). TWA: 800 ppm 10 hour(s). |
| N-Butane | 106-97-8 | 2 - 5 | ACGIH TLV (United States, 2/2010). TWA: 1000 ppm 8 hour(s). NIOSH REL (United States, 6/2009). TWA: 1900 mg/m ³ 10 hour(s). TWA: 800 ppm 10 hour(s). OSHA PEL 1989 (United States, 3/1989). TWA: 1900 mg/m ³ 8 hour(s). TWA: 800 ppm 8 hour(s). |
| Propane | 74-98-6 | 1 - 5 | ACGIH TLV (United States, 2/2010). TWA: 1000 ppm 8 hour(s). NIOSH REL (United States, 6/2009). TWA: 1800 mg/m ³ 10 hour(s). TWA: 1000 ppm 10 hour(s). OSHA PEL (United States, 11/2006). TWA: 1800 mg/m ³ 8 hour(s). TWA: 1000 ppm 8 hour(s). OSHA PEL 1989 (United States, 3/1989). TWA: 1800 mg/m ³ 8 hour(s). TWA: 1000 ppm 8 hour(s). |

Section G

#4

Section 4. First aid measures

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.

Eye contact

- : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. DO NOT remove contact lenses, if worn. Obtain medical attention without delay, preferably from an ophthalmologist.

MAPP GAS (Petroleum Gas, MAPD)

- Skin contact** : Immediately warm frostbite area with warm water (not to exceed 40.5 C, 105F). Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention.
- Frostbite** : Try to warm up the frozen tissues and seek medical attention.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : As this product is a gas, refer to the inhalation section.

Section 5. Fire-fighting measures

- Flammability of the product** : Flammable.
- Auto-ignition temperature** : Lowest known value: 286.85°C (548.3°F) (Butane).
- Flash point** : Lowest known value: Closed cup: -108.15°C (-162.7°F). (propylene)
- Flammable limits** : Lower: 2% Upper: 13%
- Products of combustion** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
- Fire-fighting media and instructions** : In case of fire, use water spray (fog), foam or dry chemical.

In case of fire, allow gas to burn if flow cannot be shut off immediately. Apply water from a safe distance to cool container and protect surrounding area. If involved in fire, shut off flow immediately if it can be done without risk.

Contains gas under pressure. Extremely flammable. In a fire or if heated, a pressure increase will occur and the container may burst or explode. 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.

- 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** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : Immediately contact emergency personnel. Stop leak if without risk. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

- Handling** : Use only with adequate ventilation. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. High pressure gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Keep container closed. Keep away from heat, sparks and flame. To avoid fire, eliminate ignition sources. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
- Storage** : Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Segregate from oxidizing materials. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section G

#4

Section 8. Exposure controls/personal protection

- 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.
- Personal protection**
- Eyes** : 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 or dusts. Monogoggles.
- Skin** : 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. Neoprene and Nitrile (NBR).
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93
- Hands** : 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.
- Personal protection in case of a large spill** : Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product.

Product name

propylene

ACGIH TLV (United States, 2/2010).
TWA: 500 ppm 8 hour(s).
ACGIH TLV (United States, 1/2005).
TWA: 500 ppm 8 hour(s). Form: All forms
ACGIH TLV (United States, 2/2010).
TWA: 1640 mg/m³ 8 hour(s).
TWA: 1000 ppm 8 hour(s).
NIOSH REL (United States, 6/2009).
TWA: 1650 mg/m³ 10 hour(s).
TWA: 1000 ppm 10 hour(s).
OSHA PEL (United States, 11/2006).
TWA: 1650 mg/m³ 8 hour(s).
TWA: 1000 ppm 8 hour(s).
OSHA PEL 1989 (United States, 3/1989).
TWA: 1650 mg/m³ 8 hour(s).
TWA: 1000 ppm 8 hour(s).

Propyne

TLV (Philippines, 1/1978).
TLV: 1800 mg/m³ 8 hour(s).
TLV: 1000 ppm 8 hour(s).
Ministry of Labor (Republic of Korea, 6/2008).
STEL: 1250 ppm 15 minute(s).
STEL: 2250 mg/m³ 15 minute(s).
TWA: 1000 ppm 8 hour(s).
TWA: 1800 mg/m³ 8 hour(s).

allene

ACGIH TLV (United States, 2/2010).
TWA: 1000 ppm 8 hour(s).
NIOSH REL (United States, 6/2009).
TWA: 1900 mg/m³ 10 hour(s).
TWA: 800 ppm 10 hour(s).

Isobutane

ACGIH TLV (United States, 2/2010).
TWA: 1000 ppm 8 hour(s).
NIOSH REL (United States, 6/2009).
TWA: 1900 mg/m³ 10 hour(s).
TWA: 800 ppm 10 hour(s).

Butane

OSHA PEL 1989 (United States, 3/1989).

Section G #4

MAPP GAS (Petroleum Gas, MAPD)

Propane

TWA: 1900 mg/m³ 8 hour(s).
TWA: 800 ppm 8 hour(s).
ACGIH TLV (United States, 2/2010).
TWA: 1000 ppm 8 hour(s).
NIOSH REL (United States, 6/2009).
TWA: 1800 mg/m³ 10 hour(s).
TWA: 1000 ppm 10 hour(s).
OSHA PEL (United States, 11/2006).
TWA: 1800 mg/m³ 8 hour(s).
TWA: 1000 ppm 8 hour(s).
OSHA PEL 1989 (United States, 3/1989).
TWA: 1800 mg/m³ 8 hour(s).
TWA: 1000 ppm 8 hour(s).

Consult local authorities for acceptable exposure limits.

Section 9. Physical and chemical properties

- Molecular weight** : 42 g/mol
- Melting/freezing point** : -102.8°C (-153°F) This is based on data for the following ingredient: Propyne. Weighted average: -152.56°C (-242.6°F)
- Critical temperature** : Lowest known value: 91.9°C (197.4°F) (propylene).
- Vapor density** : Highest known value: 2 (Air = 1) (Isobutane). Weighted average: 1.47 (Air = 1)
- Gas Density (lb/ft³)** : Weighted average: 0.2

Section 10. Stability and reactivity

- Stability and reactivity** : The product is stable.
Conditions to avoid: Stable as mixed; however, contains unstable materials (methylacetylene and propadiene). Weathering off (evaporation of light components) may allow concentration of the methylacetylene and propadiene to reach concentrations which would make mixture unstable on heating. Avoid heating of mixture or venting of lights that could cause lighter materials to weather off(evaporate).
- Incompatibility with various substances** : Extremely reactive or incompatible with oxidizing agents.
Reactive with metals.
[Additionally, avoid contact with acetylide-forming metals (copper,silver and mercury). Copper alloys (such as brass) containing sixty six percent (66%) or more of copper should not be exposed to MAPD.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Hazardous polymerization** : May Occur.

Conditions to Avoid: Elevated tempertures and pressures. Polymerization catalysts, such as metal alkyls, can cause uncontrolled polymerization. Contamination with oxygen can cause propadiene to form hazardous peroxides.

INHIBITORS/STABILIZERS

An ihibitor is added to the MAPD mixture to prevent potential unstable peroxide formation. Butanes (iso and/or normal) are also added to the MAPD mixture to prevent potential concentration of the methylacetylene and propadiene from reaching concentration levels that would render the mixture unstable in case of weathering off (evaporation of light components).

Section 11. Toxicological information

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|--------|---------|------|----------|
|-------------------------|--------|---------|------|----------|

MAPP GAS (Petroleum Gas, MAPD)

| | | | | |
|-----------|-----------------------|-----|--------------|------------|
| Isobutane | LC50 Inhalation Vapor | Rat | 658000 mg/m3 | 4 hours |
| | LC50 Inhalation Gas. | Rat | 57 pph | 15 minutes |
| | LC50 Inhalation Gas. | Rat | 570000 ppm | 15 minutes |
| Butane | LC50 Inhalation Vapor | Rat | 658000 mg/m3 | 4 hours |
| Propane | LC50 Inhalation Gas. | Rat | >800000 ppm | 15 minutes |

Chronic effects on humans : **CARCINOGENIC EFFECTS:** Classified A4 (Not classifiable for humans or animals.) by ACGIH [Petroleum Gas, Liquefied (MAPD, MAPP GAS)].

Specific effects

- Carcinogenic effects** : See ACGIH Carcinogen classification.
- Mutagenic effects** : No known significant effects or critical hazards.
- Reproduction toxicity** : No known significant effects or critical hazards.

Section 12. Ecological information**Aquatic ecotoxicity**

Not available.

Products of degradation : Products of degradation: carbon oxides (CO, CO₂) and water.

Environmental fate : Not available.




Environmental hazards : No known significant effects or critical hazards.

Toxicity to the environment : Not available.

Section 13. Disposal considerations

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation. Return cylinders with residual product to Airgas, Inc. Do not dispose of locally.

Section G**#4****Section 14. Transport information**

| Regulatory information | UN number | Proper shipping name | Class | Packing group | Label | Additional information |
|------------------------------|-----------|--|-------|-----------------------|---|--|
| DOT Classification | UN1060 | Methyl Acetylene and Propadiene mixtures, stabilized | 2.1 | Not applicable (gas). |  | - |
| TDG Classification | UN1060 | Methyl Acetylene and Propadiene mixtures, stabilized | 2.1 | Not applicable (gas). |  | Explosive Limit and Limited Quantity Index 0.125 ERAP Index 3000 Passenger Carrying Road or Rail Index Forbidden |
| Mexico Classification | UN1060 | Methyl Acetylene and Propadiene mixtures, stabilized | 2.1 | Not applicable (gas). |  | - |

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

Section 15. Regulatory information

United States

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: propylene; Isobutane; Butane; allene; Propyne; Propane
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
propylene: Fire hazard, Sudden release of pressure; Isobutane: Fire hazard, Sudden release of pressure; Butane: Fire hazard, Sudden release of pressure; allene: Fire hazard, Sudden release of pressure; Propyne: Fire hazard, reactive; Propane: Fire hazard, Sudden release of pressure
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: No products were found.

Clean Air Act (CAA) 112 regulated flammable substances: propylene; Isobutane; Butane; allene; Propyne; Propane
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

SARA 313

| | Product name | CAS number | Concentration |
|---------------------------------|--------------|------------|---------------|
| Form R - Reporting requirements | : Propylene | 115-07-1 | 40 - 50 |
| Supplier notification | : Propylene | 115-07-1 | 40 - 50 |

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS must include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations : **Connecticut Carcinogen Reporting:** None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: The following components are listed: PROPYLENE (PROPENE); PROPYNE; ISOBUTANE; BUTANE; PROPANE
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: The following components are listed: PROPYLENE; 1-PROPENE; METHYL ACETYLENE; 1-PROPYNE; PROPADIENE; 1,2-PROPADIENE; Isobutane; PROPANE, 2-METHYL-; BUTANE; PROPANE
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
New York Acutely Hazardous Substances: None of the components are listed.
New York Toxic Chemical Release Reporting: None of the components are listed.
Pennsylvania RTK Hazardous Substances: The following components are listed: 1-PROPENE; 1-PROPYNE; PROPANE, 2-METHYL-; BUTANE; PROPANE
Rhode Island Hazardous Substances: None of the components are listed.

Canada

WHMIS (Canada) : Class B1: Flammable Gases
Class A: Compressed Gas
CEPA DSL: Propylene; Isobutane; Butane; propadiene; Methyl Acetylene; Propane
CPR Compliance: This product has been classified with a hazard criteria of the CPR, and the MSDS contains all the information required for CPR.

Section 16. Other information

United States

Label requirements : FLAMMABLE GAS.
MAY CAUSE FLASH FIRE.
CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.
CONTENTS UNDER PRESSURE.

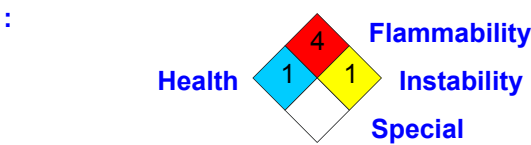
Canada

Label requirements : Class B1: Flammable Gases
Class A: Compressed Gas

Hazardous Material Information System (U.S.A.)

| | | |
|------------------|---|---|
| Health | * | 1 |
| Flammability | | 4 |
| Physical hazards | | 1 |
| | | |

National Fire Protection Association (U.S.A.)



Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, 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.

**Section G**

Material Safety Data Sheet



Propane

Section 1. Chemical product and company identification

| | |
|-------------------------------------|--|
| Product name | : Propane |
| Supplier | : AIRGAS INC., on behalf of its subsidiaries 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253 |
| Product use | : Synthetic/Analytical chemistry. |
| Synonym | : n-Propane; Dimethylmethane; Freon 290; Liquefied petroleum gas; Lpg; Propyl hydride; R 290; C3H8; UN 1075; UN 1978; A-108; Hydrocarbon propellant. |
| MSDS # | : 001045 |
| Date of Preparation/Revision | : 4/26/2011. |
| In case of emergency | : 1-866-734-3438 |

Section 2. Hazards identification

| | |
|---|--|
| Physical state | : Gas. [COLORLESS LIQUEFIED COMPRESSED GAS; ODORLESS BUT MAY HAVE SKUNK ODOR ADDED.] |
| Emergency overview | : WARNING! FLAMMABLE GAS. MAY CAUSE FLASH FIRE. MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. CONTENTS UNDER PRESSURE. Keep away from heat, sparks and flame. Do not puncture or incinerate container. May cause target organ damage, based on animal data. Use only with adequate ventilation. Keep container closed. Contact with rapidly expanding gases can cause frostbite. |
| Target organs | : May cause damage to the following organs: the nervous system, heart, central nervous system (CNS). |
| Routes of entry | : Inhalation |
| Potential acute health effects | |
| Eyes | : Contact with rapidly expanding gas may cause burns or frostbite. |
| Skin | : Contact with rapidly expanding gas may cause burns or frostbite. |
| Inhalation | : Acts as a simple asphyxiant. |
| Ingestion | : Ingestion is not a normal route of exposure for gases |
| Potential chronic health effects | |
| Chronic effects | : May cause target organ damage, based on animal data. |
| Target organs | : May cause damage to the following organs: the nervous system, heart, central nervous system (CNS). |
| Medical conditions aggravated by over-exposure | : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product. |
| See toxicological information (Section 11) | |

Section G
#5

Section 3. Composition, Information on Ingredients

| Name | CAS number | % Volume | Exposure limits |
|---------|------------|----------|---|
| Propane | 74-98-6 | 100 | ACGIH TLV (United States, 2/2010). TWA: 1000 ppm 8 hour(s). NIOSH REL (United States, 6/2009). TWA: 1800 mg/m³ 10 hour(s). TWA: 1000 ppm 10 hour(s). OSHA PEL (United States, 6/2010). TWA: 1800 mg/m³ 8 hour(s). TWA: 1000 ppm 8 hour(s). OSHA PEL 1989 (United States, 3/1989). TWA: 1800 mg/m³ 8 hour(s). TWA: 1000 ppm 8 hour(s). |

Section 4. First aid measures

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.

- Eye contact

: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
- Skin contact

: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Frostbite

: Try to warm up the frozen tissues and seek medical attention.
- Inhalation

: Move exposed person to fresh air. If not breathing, if breathing is irregular, if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion

: As this product is a gas, refer to the inhalation section.

Section G
#5

Section 5. Fire-fighting measures

- Flammability of the product

: Flammable.
- Auto-ignition temperature

: 450°C (842°F)
- Flash point

: Closed cup: -104°C (-155.2°F). Open cup: -104°C (-155.2°F).
- Flammable limits

: Lower: 2.1% Upper: 9.5%
- Products of combustion

: Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
- Fire hazards in the presence of various substances

: Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and oxidizing materials.
- Fire-fighting media and instructions

: In case of fire, use water spray (fog), foam or dry chemical.

In case of fire, allow gas to burn if flow cannot be shut off immediately. Apply water from a safe distance to cool container and protect surrounding area. If involved in fire, shut off flow immediately if it can be done without risk.

Contains gas under pressure. Flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
- 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** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

- Handling** : Use only with adequate ventilation. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. High pressure gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Keep container closed. Keep away from heat, sparks and flame. To avoid fire, eliminate ignition sources. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
- Storage** : Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Segregate from oxidizing materials. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

- 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 electrical equipment.
- Personal protection**
 - Eyes** : 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 or dusts.
 - Skin** : 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.
 - Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93
 - Hands** : 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.
- Personal protection in case of a large spill** : Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product.

Product name

Propane

ACGIH TLV (United States, 2/2010).
TWA: 1000 ppm 8 hour(s).
NIOSH REL (United States, 6/2009).
TWA: 1800 mg/m³ 10 hour(s).
TWA: 1000 ppm 10 hour(s).
OSHA PEL (United States, 6/2010).
TWA: 1800 mg/m³ 8 hour(s).
TWA: 1000 ppm 8 hour(s).
OSHA PEL 1989 (United States, 3/1989).
TWA: 1800 mg/m³ 8 hour(s).

Propane

TWA: 1000 ppm 8 hour(s).

Consult local authorities for acceptable exposure limits.

Section 9. Physical and chemical properties

| | |
|---------------------------------------|-----------------------|
| Molecular weight | : 44.11 g/mole |
| Molecular formula | : C3-H8 |
| Boiling/condensation point | : -42°C (-43.6°F) |
| Melting/freezing point | : -189.7°C (-309.5°F) |
| Critical temperature | : 96.6°C (205.9°F) |
| Vapor pressure | : 109 (psig) |
| Vapor density | : 1.6 (Air = 1) |
| Specific Volume (ft ³ /lb) | : 8.6206 |
| Gas Density (lb/ft ³) | : 0.116 |

Section 10. Stability and reactivity

| | |
|---|--|
| Stability and reactivity | : The product is stable. |
| Incompatibility with various substances | : Extremely 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. |
| Hazardous polymerization | : Under normal conditions of storage and use, hazardous polymerization will not occur. |

Section 11. Toxicological information

Toxicity data

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|----------------------|---------|-------------|------------|
| Propane | LC50 Inhalation Gas. | Rat | >800000 ppm | 15 minutes |

| | |
|-------------------------------|--|
| IDLH | : 2100 ppm |
| Chronic effects on humans | : May cause damage to the following organs: the nervous system, heart, central nervous system (CNS). |
| Other toxic effects on humans | : No specific information is available in our database regarding the other toxic effects of this material to humans. |
| Specific effects | |
| Carcinogenic effects | : No known significant effects or critical hazards. |
| Mutagenic effects | : No known significant effects or critical hazards. |
| Reproduction toxicity | : No known significant effects or critical hazards. |

Section 12. Ecological information




Aquatic ecotoxicity

| | |
|-----------------------------|--|
| Not available. | |
| Products of degradation | : Products of degradation: carbon oxides (CO, CO ₂) and water. |
| Environmental fate | : Not available. |
| Environmental hazards | : This product shows a low bioaccumulation potential. |
| Toxicity to the environment | : Not available. |

Section 13. Disposal considerations

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation.Return cylinders with residual product to Airgas, Inc.Do not dispose of locally.

Section 14. Transport information

| Regulatory information | UN number | Proper shipping name | Class | Packing group | Label | Additional information |
|------------------------|-----------|----------------------|-------|-----------------------|---|---|
| DOT Classification | UN1978 | PROPANE | 2.1 | Not applicable (gas). |  | <p>Limited quantity Yes.</p> <p>Packaging instruction Passenger aircraft Quantity limitation: Forbidden.</p> <p>Cargo aircraft Quantity limitation: 150 kg</p> <p>Special provisions 19, T50</p> |
| TDG Classification | UN1978 | PROPANE | 2.1 | Not applicable (gas). |  | <p>Explosive Limit and Limited Quantity Index 0.125</p> <p>ERAP Index 3000</p> <p>Passenger Carrying Ship Index 65</p> <p>Passenger Carrying Road or Rail Index Forbidden</p> <p>Special provisions 29, 42</p> |
| Mexico Classification | UN1978 | PROPANE | 2.1 | Not applicable (gas). |  | - |

Section G
#5

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

Section 15. Regulatory information

United States

U.S. Federal regulations : TSCA 8(a) IUR: Partial exemption
United States inventory (TSCA 8b): This material is listed or exempted.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Propane
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
Propane: Fire hazard, Sudden release of pressure
Clean Air Act (CAA) 112 accidental release prevention - Flammable Substances:
Propane

State regulations : Connecticut Carcinogen Reporting: This material is not listed.
Connecticut Hazardous Material Survey: This material is not listed.
Florida substances: This material is not listed.
Illinois Chemical Safety Act: This material is not listed.
Illinois Toxic Substances Disclosure to Employee Act: This material is not listed.
Louisiana Reporting: This material is not listed.
Louisiana Spill: This material is not listed.
Massachusetts Spill: This material is not listed.
Massachusetts Substances: This material is listed.
Michigan Critical Material: This material is not listed.
Minnesota Hazardous Substances: This material is not listed.
New Jersey Hazardous Substances: This material is listed.
New Jersey Spill: This material is not listed.
New Jersey Toxic Catastrophe Prevention Act: This material is not listed.
New York Acutely Hazardous Substances: This material is not listed.
New York Toxic Chemical Release Reporting: This material is not listed.
Pennsylvania RTK Hazardous Substances: This material is listed.
Rhode Island Hazardous Substances: This material is not listed.

Canada

WHMIS (Canada) : Class A: Compressed gas.
Class B-1: Flammable gas.
CEPA Toxic substances: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Section 16. Other information

United States

Label requirements : FLAMMABLE GAS.
MAY CAUSE FLASH FIRE.
MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
CONTENTS UNDER PRESSURE.

Canada

Label requirements : Class A: Compressed gas.
Class B-1: Flammable gas.

Propane

| | | | | |
|---|---|------------------|---|---|
| Hazardous Material Information System (U.S.A.) | : | Health | * | 1 |
| | | Flammability | | 4 |
| | | Physical hazards | | 0 |
| | | | | |



Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, 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.



Material Safety Data Sheet



Acetylene

Section 1. Chemical product and company identification

Product name : Acetylene
Supplier : AIRGAS INC., on behalf of its subsidiaries
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253
Product use : Synthetic/Analytical chemistry.
Synonym : acetylen; acetylene ; ethine; ethyne; narycylen
MSDS # : 001001
Date of Preparation/Revision : 5/11/2011.
In case of emergency : 1-866-734-3438

Section 2. Hazards identification

Physical state : Gas.
Emergency overview : WARNING!
FLAMMABLE GAS.
MAY CAUSE FLASH FIRE.
MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
CONTENTS UNDER PRESSURE.
Keep away from heat, sparks and flame. Do not puncture or incinerate container. May cause target organ damage, based on animal data. Use only with adequate ventilation.
Keep container closed.
Contact with rapidly expanding gases can cause frostbite.

Target organs : May cause damage to the following organs: lungs, upper respiratory tract, central nervous system (CNS).

Routes of entry : Inhalation

Potential acute health effects

Eyes : Contact with rapidly expanding gas may cause burns or frostbite.

Skin : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : Acts as a simple asphyxiant.

Ingestion : Ingestion is not a normal route of exposure for gases

Potential chronic health effects

Chronic effects : May cause target organ damage, based on animal data.

Target organs : May cause damage to the following organs: lungs, upper respiratory tract, central nervous system (CNS).

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

Section 3. Composition, Information on Ingredients

| <u>Name</u> | <u>CAS number</u> | <u>% Volume</u> | <u>Exposure limits</u> |
|-------------|-------------------|-----------------|--|
| Acetylene | 74-86-2 | 100 | NIOSH REL (United States, 6/2009). CEIL: 2662 mg/m ³ CEIL: 2500 ppm |

Section 4. First aid measures

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.

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Frostbite** : Try to warm up the frozen tissues and seek medical attention.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : As this product is a gas, refer to the inhalation section.

Section 5. Fire-fighting measures

- Flammability of the product** : Flammable.
- Auto-ignition temperature** : 305°C (581°F)
- Flash point** : Closed cup: -18.15°C (-0.7°F).
- Flammable limits** : Lower: 2.5% Upper: 100%
- Products of combustion** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

- Fire hazards in the presence of various substances** : Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and oxidizing materials.

- Fire-fighting media and instructions** : In case of fire, use water spray (fog), foam or dry chemical.

In case of fire, allow gas to burn if flow cannot be shut off immediately. Apply water from a safe distance to cool container and protect surrounding area. If involved in fire, shut off flow immediately if it can be done without risk.

Contains gas under pressure. Flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

- 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** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section G

#6

Section 7. Handling and storage

- Handling
- : Use only with adequate ventilation. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. High pressure gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Keep container closed. Keep away from heat, sparks and flame. To avoid fire, eliminate ignition sources. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
- Storage
- : Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Segregate from oxidizing materials. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

- 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.
- Personal protection
- Eyes
- : 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 or dusts.
- Skin
- : 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.
- Respiratory
- : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection should be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands
- : 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.
- Personal protection in case of a large spill
- : Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product.

Product name

Ethyne

NIOSH REL (United States, 6/2009).
CEIL: 2662 mg/m³
CEIL: 2500 ppm

Consult local authorities for acceptable exposure limits.

Section 9. Physical and chemical properties

- Molecular weight
- : 26.04 g/mole
- Molecular formula
- : C2-H2
- Melting/freezing point
- : Sublimation temperature: -81.8°C (-115.2 to °F)
- Critical temperature
- : 35.3°C (95.5°F)
- Vapor pressure
- : 635 (psig)
- Vapor density
- : 0.907 (Air = 1)
- Specific Volume (ft³/lb)
- : 14.7058
- Gas Density (lb/ft³)
- : 0.0691 (-80°C / -112 to °F)

Section 10. Stability and reactivity

- Stability and reactivity** : The product is stable.
- Incompatibility with various substances** : Extremely 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.
- Hazardous polymerization** : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Toxicity data

- Chronic effects on humans** : May cause damage to the following organs: lungs, upper respiratory tract, central nervous system (CNS).
- Other toxic effects on humans** : No specific information is available in our database regarding the other toxic effects of this material to humans.
- Specific effects**
- Carcinogenic effects** : No known significant effects or critical hazards.
- Mutagenic effects** : No known significant effects or critical hazards.
- Reproduction toxicity** : No known significant effects or critical hazards.

Section 12. Ecological information

Aquatic ecotoxicity


- Not available.
- Products of degradation** : Products of degradation: carbon oxides (CO, CO₂) and water.
- Environmental fate** : Not available.
- Environmental hazards** : This product shows a low bioaccumulation potential.
- Toxicity to the environment** : Not available.



Section G
#6

Section 13. Disposal considerations

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation.Return cylinders with residual product to Airgas, Inc.Do not dispose of locally.

Section 14. Transport information

| Regulatory information | UN number | Proper shipping name | Class | Packing group | Label | Additional information |
|------------------------|-----------|----------------------|-------|-----------------------|---|--|
| DOT Classification | UN1001 | ACETYLENE, DISSOLVED | 2.1 | Not applicable (gas). |  | Limited quantity Yes. Packaging instruction Passenger aircraft Quantity limitation: Forbidden. Cargo aircraft Quantity limitation: 15 kg |
| | | | | | | |

| Acetylene | | | | | | |
|-----------------------|--------|-------------------------|-----|-----------------------|---|--|
| TDG Classification | UN1001 | ACETYLENE, DISSOLVED | 2.1 | Not applicable (gas). |  | <u>Explosive Limit and Limited Quantity Index</u> 0 <u>Passenger Carrying Ship Index</u> 75 <u>Passenger Carrying Road or Rail Index</u> Forbidden <u>Special provisions</u> 38, 42 |
| Mexico Classification | UN1001 | ACETYLENE, DISSOLVED | 2.1 | Not applicable (gas). |  | - |

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

Section 15. Regulatory information

Section G

United States

U.S. Federal regulations

: TSCA 8(a) IUR: Partial exemption
 United States inventory (TSCA 8b): This material is listed or exempted.
 SARA 302/304/311/312 extremely hazardous substances: No products were found.
 SARA 302/304 emergency planning and notification: No products were found.
 SARA 302/304/311/312 hazardous chemicals: Ethyne
 SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
 Ethyne: Fire hazard, reactive, Sudden release of pressure, Immediate (acute) health hazard

 Clean Air Act (CAA) 112 accidental release prevention - Flammable Substances:
 Acetylene

#6

State regulations

: Clean Air Act (CAA) 112 regulated flammable substances: Ethyne
 Connecticut Carcinogen Reporting: This material is not listed.
 Connecticut Hazardous Material Survey: This material is not listed.
 Florida substances: This material is not listed.
 Illinois Chemical Safety Act: This material is not listed.
 Illinois Toxic Substances Disclosure to Employee Act: This material is not listed.
 Louisiana Reporting: This material is not listed.
 Louisiana Spill: This material is not listed.
 Massachusetts Spill: This material is not listed.
 Massachusetts Substances: This material is listed.
 Michigan Critical Material: This material is not listed.
 Minnesota Hazardous Substances: This material is not listed.
 New Jersey Hazardous Substances: This material is listed.
 New Jersey Spill: This material is not listed.
 New Jersey Toxic Catastrophe Prevention Act: This material is not listed.
 New York Acutely Hazardous Substances: This material is not listed.
 New York Toxic Chemical Release Reporting: This material is not listed.
 Pennsylvania RTK Hazardous Substances: This material is listed.

Rhode Island Hazardous Substances: This material is not listed.

Canada

WHMIS (Canada)

: Class A: Compressed gas.
Class B-1: Flammable gas.
Class F: Dangerously reactive material.
CEPA Toxic substances: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Section 16. Other information

United States

Label requirements

: FLAMMABLE GAS.
MAY CAUSE FLASH FIRE.
MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
CONTENTS UNDER PRESSURE.

Canada

Label requirements

: Class A: Compressed gas.
Class B-1: Flammable gas.
Class F: Dangerously reactive material.

| | | | | |
|---|---|------------------|---|---|
| Hazardous Material Information System (U.S.A.) | : | Health | * | 1 |
| | | Flammability | | 4 |
| | | Physical hazards | | 2 |
| | | | | |



Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, 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.

INSULATION

Section H

Contents:

- 1. FIBERGLASS**
- 2. RUBBER TEX**

Section H



Section 1 - Product and Company Identification

Hazard Label WARNING label

Company Information

Johns Manville
Insulation Systems
P.O. Box 5108
Denver, CO 80127 USA

Telephone: 303-978-2000 8:00AM-5:00PM M-F
Internet Address: <http://www.jm.com>
Emergency: 800-424-9300 (Chemtrec, In English)

Trade Names:

13/16" Micro-Aire® Duct Board
800 Series Spin-Glas® Board Insulations, faced
Grooved Duct Board
Mat-Faced Micro-Aire® Duct Board
Micro-Flex™ Large Diameter Pipe and Tank Wrap
Microlite® Standard

Micro-Lok® HP
Micro-Lok® Pipe Insulation
R Series Microlite® (FSK, PSK, & vinyl faced)
Spiracoustic Plus™
SuperDuct™ RC Boards

Section 2 - Hazards Identification

Emergency Overview

Inhalation of excessive amounts of dust from the product may cause temporary upper respiratory irritation and/or congestion-- remove individual to fresh air.

In high temperature applications, treatment, curing, or in geographic areas of high heat and humidity, this product may release gases irritating to the eyes, nose and throat.

Inhalation

Temporary mechanical irritation may occur upon exposure to dust or fibers released from cutting this product.

Irritation of the upper respiratory tract, coughing, and congestion may occur in extreme exposures. Severe irritation of the mouth, nose, and throat, as well as signs of central nervous system depression (drowsiness, dizziness, headache), may occur upon inhalation of vapors or gases.

Skin

Temporary irritation (itching) or redness may occur.

Ingestion

This product is not intended to be ingested (eaten). If ingested, it may cause temporary irritation to the gastrointestinal (digestive) tract.

Eyes

Temporary irritation (itching) or redness may occur.

Ears

Temporary irritation (itching) or redness may occur.

Primary Routes of Entry (Exposure)

Eyes, skin, inhalation (breathing dust and fibers) and ingestion.

Target Organs

Nose (nasal passages), throat, lungs, skin, eyes

Medical Conditions Aggravated by Exposure

Pre-existing chronic respiratory, skin, or eye diseases or conditions.

Section 3 - Composition/Information on Ingredients

| CAS # | Component | Percent |
|----------------|---|---------|
| Not Applicable | Continuous Filament Glass Fiber | 0-10** |
| Not Applicable | Fiber Glass Wool | 50-98 |
| Not Available | Non-woven, AP, FSK, PSK, or vinyl facings; or vinyl, acrylic, or latex coatings | 0-40 |
| Not Available | Urea extended phenol-formaldehyde binder (cured) | 2-18* |
| Not Available | Urea extended phenol-melamine formaldehyde binder (cured) | 2-18* |
| Not Available | Acrylic Coating (present in SuperDuct RC and Spiracoustic Plus™ only) | 0-10 |
| 50-00-0 | Formaldehyde | <1 |
| 1333-86-4 | Carbon black, bound (present in black products only) | <1 |

| | | |
|-----------|-------------------|-------|
| 1309-64-4 | Antimony trioxide | 0.1-3 |
|-----------|-------------------|-------|

Component Information

* Binder may be either of these.

** Component of scrim facings

Antimony trioxide (fire retardant) may be present in the facings and/or adhesives. Occupational exposure to airborne antimony trioxide is not expected to occur due to product form(s) and intended use(s). Exposure limit is given for reference only.

Formaldehyde may be released by partial hydrolysis of the urea formaldehyde polymer.

General Product Description

Fibrous glass blanket, board, or formed shapes, with or without facings.

Section 4 - First Aid Measures**First Aid: Inhalation**

If dust is inhaled in excess of exposure limits referenced in section 8 of this safety data sheet, remove individual to fresh air. Drink water to clear throat, and blow nose to remove dust. A saline spray in the nose may help clear any fibers.

First Aid: Skin

Wash gently with soap and water to remove dust and fibers. Alternatively, fibers can be removed from the skin by use of ordinary masking or wrapping tape. Should irritation persist, seek medical attention.

First Aid: Ingestion

Rinse mouth with water to remove dust and fibers and drink plenty of water to help reduce irritation. If irritation persists, seek medical attention.

First Aid: Eyes

Do not rub or scratch eyes. Dust particles may cause the eye to be scratched. Flush eyes with large amounts of water until irritation subsides. If irritation persists, seek medical attention.

First Aid: Ears

Wash exposed skin with soap and water. If irritation develops in the inner ear, seek medical attention.

First Aid: Notes to Physician

Dust from the product may cause mechanical irritation of the eyes, skin, and upper respiratory tract. Treat symptomatically. Irritating gases may be released under conditions of high heat or humidity. At high levels, these could cause severe upper respiratory and eye irritation. Formaldehyde gas is a skin and respiratory sensitizer. Treatment should be directed toward removing the source of irritation with symptomatic treatment as necessary.

Section 5 - Fire Fighting Measures**Flash Point:** Not applicable**Upper Flammable Limit (UFL):** Not applicable**Auto Ignition:** Not determined**Rate of Burning:** Not determined**General Fire Hazards**

There is no potential for spontaneous fire or explosion. Inorganic glass fibers are naturally non-combustible and non-flammable.

Extinguishing Media

Carbon dioxide (CO₂), water, water fog, dry chemical.

Fire Fighting Equipment/Instructions

No special procedures are expected to be necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases.

Section 6 - Accidental Release Measures**Clean-Up Procedures**

Pick up large pieces. Vacuum dusts. If sweeping is necessary, use a dust suppressant such as water. Do not dry sweep dust accumulation. These procedures will help to minimize potential exposures.

Section 7 - Handling and Storage**Handling Procedures**

Use protective equipment as described in Section 8 of this safety data sheet when handling uncontained material. Handle in accordance with good industrial hygiene and safety practices.

Section H
#1**Method Used:** Not applicable**Lower Flammable Limit (LFL):** Not applicable**Flammability Classification:** Not determined

Storage Procedures

Warehouse storage should be in accordance with package directions, if any. Material should be kept clean, dry, and in original packaging.

Section 8 - Exposure Controls / Personal Protection**Exposure Guidelines****A: General Product Information**

The Occupational Safety and Health Administration (OSHA) has not adopted specific occupational exposure standards for fiber glass. Fiber glass is treated as a nuisance dust and is regulated by OSHA as a particulate not otherwise regulated (total dust) shown in CFR 1910.1000 Table Z-3.

Respirable fraction 5 mg/m³

Total dust 15 mg/m³

JM has adopted the fiber glass industry voluntary Product Stewardship Program (PSP), formerly the NAIMA-OSHA Health and Safety Partnership Program (HSPP). Under the PSP, JM recommends that exposures be limited to the voluntary concentration of 1 f/cc TWA for fibers longer than 5 microns with a diameter less than 3 microns. This will help minimize potential irritation effects. The PSP also includes the PPE recommendations described below.

B: Component Exposure Limits**Formaldehyde (50-00-0)**

OSHA: 0.75 ppm TWA

0.5 ppm Action Level; 0.75 ppm TWA; 2 ppm STEL (Irritant and potential cancer hazard - see 29

CFR 1910.1048)

3 ppm TWA (unless specified in 1910.1048)

ACGIH: 0.3 ppm Ceiling

Carbon black, bound (present in black products only) (1333-86-4)

OSHA: 3.5 mg/m³ TWA

3.5 mg/m³ TWA

ACGIH: 3.5 mg/m³ TWA

PERSONAL PROTECTIVE EQUIPMENT**Personal Protective Equipment: Eyes/Face**

Safety glasses with side shields are recommended to keep dust out of the eyes.

Personal Protective Equipment: Ears

Use ear protection (earplugs, hood, or earmuffs) to prevent airborne dust or fibers from entering the ear, if necessary.

Personal Protective Equipment: Skin

Leather or cotton gloves should be worn to protect against mechanical abrasion. See also Personal Protective Equipment: General, below.

Personal Protective Equipment: Respiratory

A NIOSH-approved respirator should be used if ventilation is unavailable, or is inadequate for keeping levels below the applicable exposure limits referenced in Section 8 of this SDS.

Ventilation

In fixed manufacturing settings, local exhaust ventilation should be provided at areas of cutting, milling or other processing to remove airborne dust and fibers.

Personal Protective Equipment: General

Wear a cap, a loose-fitting, long-sleeved shirt and long pants to protect skin from irritation. Exposed skin areas should be washed with soap and water after handling or working with fiber glass. Clothing should be washed separately from other clothes, and the washer should be rinsed thoroughly (run empty for a complete wash cycle). This will reduce the chances of fiber glass being transferred to other clothing.

Section H**#1**

Section 9 - Physical & Chemical Properties

| | | | |
|-------------------------------------|--|--------------------------|-------------------|
| Appearance: | Fibrous glass blanket, board, or formed shapes, with or without facings. | Odor: | Mild formaldehyde |
| Physical State: | Solid | pH: | Not applicable |
| Vapor Pressure: | Not applicable | Vapor Density: | Not applicable |
| Boiling Point: | Not applicable | Melting Point: | >704°C/1300°F |
| Solubility (H₂O): | Nil | Specific Gravity: | Variable |
| VOC: | Not determined | | |

Section 10 - Stability & Reactivity Information**Stability**

These products are not reactive.

Hazardous Decomposition

May form carbon dioxide and carbon monoxide.

Hazardous Polymerization

Will not occur.

Section 11 - Toxicological Information**Acute Toxicity****A: General Product Information**

If dust evolves from this product during use it may cause temporary mechanical irritation or scratchiness of the throat and/or itching of the eyes and skin.

Exposure to formaldehyde may cause eye and upper respiratory irritation, and possible respiratory or skin sensitization (allergy). If sensitization occurs, subsequent exposures to formaldehyde may worsen asthma or other respiratory problems, and cause allergic-type reactions.

B: Component Analysis - LD50/LC50**Formaldehyde (50-00-0)**

Inhalation LC50 Rat: 0.578 mg/L/4H; Oral LD50 Rat: 500 mg/kg

Carbon black, bound (present in black products only) (1333-86-4)

Oral LD50 Rat: >15400 mg/kg; Dermal LD50 Rabbit: >3 g/kg

Antimony trioxide (1309-64-4)

Oral LD50 Rat: >34600 mg/kg

Carcinogenicity**A: General Product Information**

Exposure to formaldehyde has been associated with the development of nasopharyngeal cancer in laboratory animals and humans. Formaldehyde has been classified as a known human carcinogen, Group 1, by the International Agency for Research on Cancer (IARC). The US National Toxicology Program (NTP) consider formaldehyde as known to be a human carcinogen. OSHA specifically regulates formaldehyde under 29 CFR 1910.1048.

B: Component Carcinogenicity**Continuous Filament Glass Fiber**

ACGIH: A4 - Not Classifiable as a Human Carcinogen (listed under Synthetic Vitreous Fibers)

IARC: Group 3 - Not Classifiable (IARC Monograph 81 [2002] (listed under Man-made mineral fibres), Monograph 43 [1988])

Fiber glass wool

NTP: Not listed.

IARC: Group 3 - Not Classifiable (IARC Monograph 81 [2002] (listed under Man-made mineral fibres), Monograph 43 [1988])

Section H
#1

Formaldehyde (50-00-0)

ACGIH: A2 - Suspected Human Carcinogen
OSHA: 0.5 ppm Action Level; 0.75 ppm TWA; 2 ppm STEL (Irritant and potential cancer hazard - see 29 CFR 1910.1048)
NTP: Known to be a human carcinogen
IARC: Group 1 - Known Human Carcinogen

Carbon black, bound (present in black products only) (1333-86-4)

ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Group 2B - Possibly Carcinogenic to Humans (IARC Monograph 93 [in preparation], Monograph 65 [1996])

Antimony trioxide (1309-64-4)

ACGIH: A2 - Suspected Human Carcinogen (production)
IARC: Group 2B - Possibly Carcinogenic to Humans (IARC Monograph 47 [1989])

Chronic Toxicity

Continuous Filament Glass Fiber: No chronic health effects are known to be associated with exposure to continuous filament fiber glass. Results from epidemiologic studies have not shown any increases in respiratory disease or cancer. The International Agency for Research on Cancer (IARC) has classified continuous filament fiber glass as a Group 3 substance, not classifiable as to its carcinogenicity to humans. Because of the large diameter of continuous filament fibers, these products are not considered respirable.

Fiber Glass Wool (non-durable glass fibers):

In October 2001, IARC classified fiber glass wool as Group 3, "not classifiable as to its carcinogenicity to humans." The 2001 decision was based on current human and animal research that shows no association between inhalation exposure to dust from fiber glass wool and the development of respiratory disease.

In 2011, the National Toxicology Program (NTP, a component of the United States Department of Health and Human Services) issued its *12th Report on Carcinogens* (Report). The Report makes clear that any glass fibers that have been successfully assessed in an animal study and shown no cancer hazard are NOT among those "certain" fibers and NOT listed in the Report.

The glass fibers comprising the products on this MSDS have either been successfully assessed by appropriate animal protocols and / or have modeled Kdis values such that they are considered non-durable and the current human and animal research that shows no association between inhalation exposure to dust from fiber glass wool and the development of respiratory disease is applicable to these fibers.

Section H
#1**Section 12 - Ecological Information****Ecotoxicity****A: General Product Information**

No data available for this product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity**Formaldehyde (50-00-0)**

96 Hr LC50 Pimephales promelas: 22.6-25.7 mg/L [flow-through]; 96 Hr LC50 Lepomis macrochirus: 1510 µg/L [static]; 96 Hr LC50 Brachydanio rerio: 41 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 0.032-0.226 ml/L [flow-through]; 96 Hr LC50 Oncorhynchus mykiss: 100-136 mg/L [static]; 96 Hr LC50 Pimephales promelas: 23.2-29.7 mg/L [static]
96 Hr EC50 water flea: 20 mg/L; 48 Hr EC50 Daphnia magna: 2 mg/L

Carbon black, bound (present in black products only) (1333-86-4)

24 Hr EC50 Daphnia magna: >5600 mg/L

Antimony trioxide (1309-64-4)

96 Hr LC50 Pimephales promelas: >80 mg/L [static]; 96 Hr LC50 Brachydanio rerio: >1000 mg/L [static]
72 Hr EC50 Selenastrum capricornutum: 67 mg/L
48 Hr EC50 Daphnia magna: >1000 mg/L

Section 13 - Disposal Considerations**US EPA Waste Number & Descriptions****General Product Information**

This product is not expected to be a hazardous waste when it is disposed of according to the U.S. Environmental Protection Agency (EPA) under Resource Conservation and Recovery Act (RCRA) regulations. Product characterization after use is recommended to ensure proper disposal under federal and/or state requirements.

Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

Section 14 - Transport Information**International Transport Regulations**

These products are not classified as dangerous goods according to international transport regulations.

Section 15 - Regulatory Information**US Federal Regulations****A: General Product Information**

SARA 311/312: This product is not classified as hazardous under SARA 311/312.

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Formaldehyde (50-00-0)

SARA 302: 500 lb TPQ

SARA 313: 0.1 % de minimis concentration

CERCLA: 100 lb final RQ; 45.4 kg final RQ

Antimony trioxide (1309-64-4)

CERCLA: 1000 lb final RQ; 454 kg final RQ

State Regulations**A: General Product Information**

The glass fibers in this product are not known to be regulated.

Other state regulations may apply. Check individual state requirements.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

| Component | CAS # | CA | FL | MA | MN | NJ | PA |
|--|-----------|-----|----|-----|-----|-----|-----|
| Formaldehyde | 50-00-0 | Yes | No | Yes | Yes | Yes | Yes |
| Carbon black, bound (present in black products only) | 1333-86-4 | Yes | No | Yes | Yes | Yes | Yes |
| Antimony trioxide | 1309-64-4 | Yes | No | Yes | Yes | Yes | Yes |

#1

Section H

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):
WARNING! This product contains a chemical known to the state of California to cause cancer.

| Component | CAS # |
|--|----------------|
| Fiber Glass Wool ('related to Fibrous glass) | Not Applicable |
| Formaldehyde | 50-00-0 |
| Antimony trioxide | 1309-64-4 |

TSCA Status

This product and its components are listed on the TSCA 8(b) inventory.

None of the components listed in this product are listed on the TSCA Export Notification 12(b) list.

International Regulations**A: General Product Information**

These products are considered articles under both U.S. and international product regulations and as such, these products do not require registration or notification on the various country-specific inventories.

B: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

| Component | CAS # | Minimum Concentration |
|---------------------------------|----------------|--------------------------------|
| Continuous Filament Glass Fiber | Not Applicable | 1 % (related to Fibrous glass) |
| Fiber Glass Wool | Not Applicable | 1 % (related to Fibrous glass) |
| Formaldehyde | 50-00-0 | 0.1 % |

WHMIS Classification

Controlled Product Classification: D2A

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations. This SDS contains all the information required by the Controlled Products Regulations.

| |
|---------------------------------------|
| Section 16 - Other Information |
|---------------------------------------|

Other Information

Prepared for:
Johns Manville
Insulation Systems
P. O. Box 5108
Denver, CO USA 80217-5108
Prepared by:
Johns Manville Technical Center
P.O. Box 625005
Littleton, CO USA 80162-5005

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

| Date | MSDS # | Reason |
|------------|-------------|--|
| 04/28/04 | 1009-2.0106 | Regulatory update. Minor edits. |
| 05/20/04 | 1009-2.0107 | Sect. 1 Removal of discontinued trade names: 824 CAN Spin-Glas®; 830 CAN Spin-Glas®; Acoustic Backing Board; BS 476, EcoTherm™ Industrial Pipe Insulation; Fabricated Duct Board; Permacote Spiracoustic™; Pipe and Tank Insulation; Rigid Round™ (faced); Spiracoustic™; SuperRound®. |
| 08/05/04 | 1009-2.0108 | Sect. 1 Label ID edit. Removal of discontinued trade name, Micro-Flex CTS. |
| 03/22/05 | 1009-2.0108 | Sect. 1 addition of Insul-SHIELD® Coated Black from MSDS 1010. Addition of Blended Blowing Wool. Edits to Sect. 2 for new additions. |
| 10/03/05 | 1009-2.0110 | Section 1, SuperVane was removed. Discontinued product. |
| 11/17/05 | 1009-2.0111 | Regulatory update. Minor edits in Sections 8, 11, and 15. Removed all revision notes prior to 2004. Revision notes are stored in database archives. |
| 01/31/07 | 1009-2.0112 | Addition of Micro-Lok HP to trade names. Updates made throughout SDS for current trade names listed on this SDS. Section 15 TSCA 12b edits. Removed DBDO. These products are articles under TSCA and DBDO does not need to be reported under TSCA 12b. |
| 06/26/07 | 1009-2.0113 | Addition of Micromat Rx to trade names. Minor edits throughout. Addition of WHMIS classification in section 15. |
| 04/28/08 | 1009-2.0114 | Updated SDS to GHS format. |
| 03/16/09 | 1009-2.0115 | Addition of 13/16" Micro-Aire® Duct Board to trade names. |
| 11/23/09 | 1009-2.0116 | Removed Zeston Hi-Lo Temp® Insulation Inserts from trade names. |
| 09/07/2011 | 1009-2.02 | Regulatory Update |
| 09/08/2011 | 1009-2.03 | Correction sect. 8 respiratory |
| 01/11/2013 | 1009-2.04 | Update trade names and toxicological information in section 11. |

Section H

#1

Material Name: Fiber Glass Wool Commercial & Industrial Insulation

**Safety Data Sheet
ID: 1009**

End of Sheet 1009

Section H
#1



Material Safety Data Sheet

1. Company & Product Information

Company Name:
UniTherm Insulation Systems
711 Jones Street
Lewisville, Texas 75057
p | 800.657.9542 f | 972.436.0112

Product:
Black Rubber Foam
Chemical Family:
Closed cell elastomeric insulation

2. Ingredients

| Chemical Name | CAS No. | Weight (%) |
|---------------|------------|------------|
| NBR | 9003-18-3 | 30 |
| PVC | 9002-86-2 | 25 |
| DOP | 117-81-7 | 15 |
| AC | 123-77-3 | 10 |
| S | 7704-34-9 | 1 |
| ATH | 21645-51-2 | 15 |
| SB203 | n/a | 4 |

3. Hazards Identification

POTENTIAL HEALTH EFFECTS

Eye: Dust, powder, liquid may cause eye irritation. Irritating vapors can occur if processed at high temperatures.

Skin Contact: Dust, powder, or liquid may cause skin irritation. Skin contact with molten or heated material can cause serious burns.

Ingestion: May be harmful if swallowed.

Inhalation: Dust, powder, or liquid may cause irritation of the respiratory tract. Irritating vapors can occur if processed at high temperature.

Section H

#2

4. First Aid Measures

| | |
|---------------------------|--|
| Eye: | Flush with plenty of water to remove particles. Get medical attention if irritation persists. |
| Skin: | Flush skin with amounts of water, follow by washing with soap and water. Get medical attention if need. If burned by contact with molten material, cool as quickly as possible. Do not peel material from skin. Get medical aid. |
| Inhalation: | Remove victim to fresh area. Seek medical advice if irritation persists. |
| Ingestion: | Do not induce vomiting. Call a physician if needed. |
| Note to Physician: | Burns should be treated as thermal burns. The material will come off as healing occurs, therefore, immediate removal from skin is not necessary. |

5. Fire Fighting Measures

| | |
|---------------------------------------|--|
| Flammability: | May be combustible at high temperature. |
| Extinguishing Media: | Dry chemical, carbon dioxide, water spray. |
| Fire fighting: | Wear full protective clothing and NIOSH-approved self contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. |
| Unusual Fire or Explosion | Container may explode when heated. Use water spray to keep fire exposed container cool. Vapors of DOP may be heavier than air and can travel considerable distance to source of ignition and flash back. |
| Hazardous Combustible Products | Carbon monoxide, carbon dioxide, sulphur dioxide, nitrogen oxides, irritating, and toxic gases or fumes. |

Section H
#2

6. Accidental Release Measures

Steps to be taken in case material is released or spilled

Remove heat, spark, open flame, and ignition sources. Ventilate and evacuate area. Wear appropriate personal protective equipment as specified in Section 8. Shut off source of spills if safe easy to do so. Sweep up and containerize for reclamation or disposal, using absorbent material such as sand, soil or diatomaceous earth. Collect as much of the spilled material as possible, place the spilled material into a suitable disposal container. Keep spilled material out of sewers, ditches and bodies of water.

Waste Disposal Method

Use Waste Disposal Methods in accordance with local rules and regulations.

7. Handling And Storage

Handling

Keep away from heat, spark, open flame, ignition sources. Keep containers closed when not in use. Minimize dust generation and accumulation. Avoid breathing dust or vapor. Avoid contact with skin, eyes and clothing. Avoid prolonged or repeated skin contact. Wash hands with soap and water after contact. Protect against physical damage. Empty containers may contain product residue. Do not reuse and damage empty container.

Storage

Store in dry, cool, well ventilated area. No smoking. Consumption of food and beverage should be avoided in work areas. Wash hands with soap and water thoroughly before eating, drinking. Keep away incompatible substances, such as oxidizing agents, nitrates, chlorates, chromic anhydride, halogens, zinc, tin, alkali metals, phosphorus, ammonia.

8. Exposure Control - Personal Protection

No need under normal use. If prolonged or repeated contact with this material, handle as follows.

Engineering Controls

If current ventilation practice is not adequate to maintain airborne concentrations below the established exposures limits, additional ventilation or exhaust systems may require. Where explosive mixtures may be present, electrical systems safe for such locations must be used.

Respiratory Protection

Appropriate vapor canister, self contained breathing apparatus or supplied air hose mask below current applicable OSHA safety and health requirements.

Personal Protective Equipment

Chemical safety glasses, neoprene gloves, protect coat and impervious clothing or boots. Eye wash and safety shower if needed.

Exposure Limit

PVC

OSHA PEL 15mg/m³ TWA 5mg/8 hrs

ACGIH TLV 15mg/m³ TWA 5mg/8 hrs

DOP

ACGIH TLV 15mg/m³ TWA

OSHA PEL 15mg/m³ TWA

NIOSH STEL 10mg/m³ ; NIOSH TWA 5mg/m³

9. Physical And Chemical Properties

| | |
|-------------------------------|--|
| pH: | n/a |
| Flammability: | May be combustible at high temperature, |
| Solubility in Water: | Insoluble in water. |
| Appearance Characters: | Black with plastic/rubber odor solid. |
| Chemical Uses: | Air thermal insulation, industrial cooling, reducing noise, and vibration. |

Section H

#2

10. Stability And Reactivity

| | |
|---------------------------------------|--|
| Stability: | Stable |
| Incompatibilities: | Oxidizing agents, nitrates, chlorates, chromic anhydride, halogens, zinc, tin, alkali metals, phosphorus, ammonia. |
| Hazardous Combustible Products | Carbon monoxide, carbon dioxide, sulphur dioxide, nitrogen oxides, irritating, and toxic gases or fumes. |
| Hazardous Polymerization | Will not occur. |

11. Toxicological Information

PVC

Oral LD50 for Rat: 500mg/kg

DOP

Oral LD50 for Rat: 30000mg/kg

Dermal LD50 for Rabbit: 25000mg/kg

12. Ecological Information

Report spills as required to appropriate authorities. U.S. Coast Guard regulations require immediate reporting of spills that could reach any waterway including intermittent dry creeks.

13. Disposal Consideration

Recycle the products if possible. All disposals must comply with federal, state, and local regulations. The material, if spilled or discarded, may be a regulated waste. Refer to state and local regulations. If regulated solvents are used to cleanup spilled material, the resulting waste mixture may be regulated. Department of Transportation (DOT) regulations may apply for transporting this material when spilled.

Section H
#2

14. Transport Information

Not a hazard material or hazard goods for transportation.
Transportation Fashion: By sea, by highway.

15. Regulatory Information

Law Information
Technical Instructions for the Safe Transport of Dangerous Goods.
Dangerous Goods Regulation (IATA)xs