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Manufacturer's CAGE: 1P573

Safety Data Sheet

Date Effective: April 29, 2015

SPI# 02629-AB, 02629-AF
SPI-Chem™ Polyethylene Glycol PEG 200

Section 1: Identification

Chemical Name/Synonyms..... Polyethylene Glycol 200

Chemical family..... Oxyalkylene Polymer

Emergencies
Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...
Worldwide phone: 1-(703)-527-3887
Worldwide FAX: 1-(703)-741-6090
Toll-free phone: 1-(800)-424-9300 USA only

Product or Trade Name..... SPI-Chem™ Polyethylene Glycol PEG 200

CAS #'s..... 25322-68-3; 111-46-6; 107-21-1

Chemical Formula..... Mixture

HAZARDOUS IDENTIFICATION

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Eye irritation (Category 2B)

Hazard Symbol:

Signal Word: Warning

Hazard Statements:
H303 May be harmful if swallowed
H313 May be harmful in contact with skin
H316 Causes mild skin irritation
H320 Cause eye irritation
H336 May cause respiratory irritation

Precautionary Statements:
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.

Hazardous Material Information System USA
Health..... 1
Fire Hazard..... 1

Reactivity..... 0
Personal Protection.....

NFPA Rating (estimated)
Health..... 1
Flammability..... 1
Reactivity..... 0

Section 2: Composition

Component	CAS#	Percentage	EC Number
Polyethylene glycol	25322-68-3	>96%	not listed
Diethylene glycol	111-46-6	<4%	203-872-2
Ethylene glycol	107-21-1	<=1.0%	203-473-3

Section 3: Hazard Identification

Emergency overview: No significant immediate hazards for emergency response are known. This product is not a “Hazardous Chemical” as defined by the OSHA Hazard Communication Standard, 29 CRF 1910.1200.

Routes of Entry: Skin and eye contact, ingestion, inhalation

Physical state: Liquid

Color: Colorless

Odor: Mild

Potential health effects:
Eyes: May cause slight temporary eye irritation. Corneal injury is unlikely.
Skin contact: Prolonged contact is essentially nonirritating to skin.
Skin absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts. Prolonged/repeated exposure to damaged skin (as in burn patients) may result in absorption of toxic amounts.
Inhalation: At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. No adverse effects are anticipated from single exposure to mist. For respiratory irritation and narcotic effects: No relevant data found.
Ingestion: Very low toxicity. Harmful effects not anticipated from swallowing small amounts.
Aspiration hazard: Base on physical properties, not likely to be an aspiration hazard.
Effects of repeated exposure: Recent findings of kidney failure and death in burn patients, as well as some studies using animal burn models, suggest that polyethylene glycol may have been a factor. The use of topical applications containing this material may not be appropriate in severely burned patients or individuals with impaired renal function.

Section 4: First Aid Measures

General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Skin: Wash skin with plenty of water.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.

indication of immediate medical attention and special treatment needed: Absorption may be promoted by damaged skin. J Pharm Sci. 1985 Oct;74(10):1062-6; Burns Incl Therm Inj 1982 Sep;9(1):49-52. Due to structural analogy and clinical data, this material may have a mechanism of intoxication similar to ethylene glycol. On that basis, treatment similar to ethylene glycol intoxication may be of benefit. In cases where several ounces (60 - 100 ml) have been ingested, consider the use of ethanol and hemodialysis in the treatment. Consult standard literature for details of treatment. If ethanol is used, a therapeutically effective blood concentration in the range of 100 – 150 mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol (Brent, J. et al., New England Journal of Medicine, Feb. 8, 2001, 344:6, p. 424-9): loading dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. Maintain adequate ventilation and oxygenation of the patient. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Section 5: Fire Fighting Measures

Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: carbon monoxide and carbon dioxide

Unusual fire and explosion hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Fire fighting procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of re-ignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do no use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special protective equipment for firefighters: Wear positive-pressure self contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Section 6: Accidental Release Measures

Personal precautions: use appropriate safety equipment. For additional information, refer to section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information

Spills: Contain spilled material if possible. Collect in suitable and properly labeled containers. See Section 13, Disposal Concentrations, for additional information.

Section 7: Handling and Storage

General handling: See Section 8, Exposure Controls And Personal Protection

Other precautions: Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

Storage: Store in original container. Use product promptly after opening. Avoid prolonged exposure to heat and air. Store in the following materials: Stainless steel, Polypropylene, Polyethylene-lined container, Teflon, glass-lined container, Plastite 3066 lined container, Plastite 3070 lined container, 316 stainless steel.

Section 8: Exposure Controls and Personal Protection

Occupational exposure limits:

Component	List	Type	Value
Diethylene glycol	AIHA WEEL	TWA	10 mg/m^3
Ethylene glycol	ACGIH	Ceiling Aerosol	100 mg/m^3
Polyethylene glycol	AIHA WEEL	TWA Particulate	10 mg/m^3

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Personal protection

Eyes: Use safety glasses (with side shields).

Skin and body: When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, boots, apron, or full-body suit will depend on the task.
Respiratory: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Hands: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Section 9: Physical and Chemical Properties

Physical state: Liquid

Color: Colorless

Odor: Mild

Odor threshold: No test data available

pH: 4.5 - 7.0 *ASTM E70* (5% aqueous solution)

Melting Point: Not applicable to liquids

Freezing Pointt: -65 °C (-85 °F) ASTM D1177

Boiling Point (760 mmHg): > 200 °C (> 392 °F) *Calculated* Decomposes.

Flash Point - Closed Cup: 185 °C (365 °F) *ASTM D93*

Flash Point - Open Cup: 190 °C (374 °F) *ASTM D92*

Evaporation Rate (Butyl Acetate = 1): No test data available

Flammability (solid, gas): Not applicable to liquids

Flammable Limits In Air
Lower: No test data available
Upper: No test data available

Vapor Pressure: < 0.01 mmHg @ 20 °C *ASTM E1719*
Vapor Density (air = 1): 7 *Calculated*

Specific Gravity (H2O = 1): 1.127 20 °C/20 °C *Calculated*

Solubility in water (by weight): 100 % @ 20 °C *Measured*

Partition coefficient, noctanol/water (log Pow): No data available for this product.

Autoignition Temperature No test data available

Decomposition Temperature: No test data available

Kinematic Viscosity: 4.1 - 4.8 cSt @ 98.9 °C *ASTM D445*

Explosive properties: no data available

Oxidizing properties: no data available

Liquid Density: *9.379 lb/gal @ 20 °C ASTM D4052*

Molecular Weight: 190 - 210 g/mol *Calculated*

Volatile Organic Compounds: 11 g/l *EPA Method No. 24*

Section 10: Stability and Reactivity

Reactivity: No dangerous reaction known under conditions of normal use

Chemical stability: Thermally stable at typical use temperatures

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Exposure to elevated temperatures can cause production to decompose. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible materials: Avoid contact with strong acids, strong bases, strong oxidizers

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: aldehydes, alcohols, ethers, carbon dioxide, carboxylic acids, polymer fragments.

Section 11: Toxicological Information

Acute Toxicity

Ingestion: LD50, rat > 10000 mg/kg

Dermal: LD50, rabbit > 20000 mg/kg

Inhalation: No deaths occurred at this concentration. LC50, 6 h, Aerosol, rat > 2.5 mg/l

Eye damage/eye irritation: May cause slight temporary eye irritation. Corneal injury unlikely.

Skin corrosion/irritation: Prolonged contact is essentially nonirritating to skin.

Skin sensitization: Did not cause allergic reactions when tested in guinea pigs. Did not cause allergic reactions when tested in humans.

Respiratory: No relevant data found.
Repeated dose toxicity: Recent findings of kidney failure and death in burn patients, as well as some studies using animal burn models, suggest that polyethylene glycol may have been a factor. The use of topical applications containing this material may not be appropriate in severely burned patients or individuals with impaired renal function. Based on the available data, repeated exposures are not anticipated to cause significant adverse effects.

Chronic toxicity and carcinogenicity: Did not cause cancer in laboratory animals.

Developmental toxicity: Did not cause birth defects in laboratory animals.

Reproductive toxicity: No relevant data found

Genetic toxicology: In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Section 12: Ecological Information

Toxicity: Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50>100 mg/L in the most sensitive species tested)

Fish and acute prolonged toxicity: LC50, Daphnia magna (water flea), 48 h:> 10000 mg/L

Persistence and degradability: Material is readily biodegradable. Passes OECD tests for ready biodegradability.

OECD biodegradation tests:

Biodegradation	Exposure Time	Method	10 Day Window
85%	28 day	OECD 301F Test	Pass

Theoretical oxygen demand: 1.67 mg/mg

Bioaccumulative potential: No bioconcentration is expected because of the relatively high water solubility.

Mobility in soil: No data available.

Section 13: Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste Characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITIONS AS DESCRIBED IN MSDS SECTION: Composition information. FOR UNUSED AND UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler, Reclaimer, Incinerator or other thermal destruction device.

Section 14: Transport Information

DOT Non-Bulk
Not Regulated

DOT Bulk
Not Regulated
IMDG
Not Regulated

ICAO/IATA
Not Regulated

Section 15: Regulatory Information

OSHA Hazard Communication Standard

This product is not a “Hazardous Chemical” as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200

Superfund Amendments and Reauthorization Act of 1986 Title III (emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312.
Immediate (Acute) Health Hazard: No
Delayed (Chronic) Health Hazard: No
Fire Hazard: No
Reactive Hazard: No
Sudden Release of Pressure Hazard: No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313.
This product contains the following substances which are subject to the reporting requirements of section 313 Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372

Component	CAS #	Amount
Ethylene glycol	107-21-1	<= 1.0%

Pennsylvania (Worker and Community Right-to-Know Act): Pennsylvania Hazardous Substances list and/or Pennsylvania Environmental Hazardous substance List:
The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania environmental Substance List, and are present at levels which require reporting.

Component	CAS#	Amount
Diethylene glycol	111-46-6	<= 4.0%
Ethylene glycol	107-21-1	<= 1.0%

Pennsylvania (Worker and Community Right-to-Know Act) Pennsylvania Special Hazardous substance List:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986):
This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US Toxic Substances Control Act:
All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

CEPA-Domestic Substances List (DSL): All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

Section 16: Other Information

Disclaimer of Liability:

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body; direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. SPI Supplies will not provide to

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