Section 1. Product and Company Identification

Product Name Ethyl Mercaptan
CAS Number 75-08-1

Parchem - fine & specialty chemicals
415 Huguenot Street
New Rochelle, NY 10801
(914) 654-6800 **(914) 654-6899**
parchem.com **info@parchem.com**

EMERGENCY RESPONSE NUMBER
CHEMTEL
Toll Free US & Canada: 1 (800) 255-3924
All other Origins: 1 (813) 248-0585
Collect Calls Accepted

Section 2. Hazards Identification

Classification of the substance or mixture
GHS Classification
Flammable liquids, Category 1
Acute toxicity, Category 4, Oral
Acute toxicity, Category 4, Inhalation
Aspiration hazard, Category 2
Skin sensitization, Sub-category 1B
Acute aquatic toxicity, Category 1
Chronic aquatic toxicity, Category 1

GHS Label Elements
Pictograms:

Signal word: DANGER

Hazard and precautionary statements
Hazard Statements
H224: Extremely flammable liquid and vapor.
H302: Harmful if swallowed.
H305: May be harmful if swallowed and enters airways.
H317: May cause an allergic skin reaction.
H332: Harmful if inhaled.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statements
Prevention
P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.
P243: Take precautionary measures against static discharge.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
Response
P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P331: Do NOT induce vomiting.
P312: Call a POISON CENTER or doctor/physician if you feel unwell.
Storage
P403 + P235: Store in a well-ventilated place. Keep cool.
Disposal
P501: Dispose of contents/ container to an approved waste disposal plant.

Danger
Form: Liquid
Physical State: Liquid
Color: Colorless
Odor: Repulsive
OSHA Hazards: Combustible liquid and vapor. Skin sensitizer

Carcinogenicity
IARC: No ingredient of this product, present at levels greater than or equal to 0.1%, is identified as probable, possible or confirmed human carcinogen by IARC.
NTP: No ingredient of this product, present at levels greater than or equal to 0.1%, is identified as a known or anticipated carcinogen by NTP.
ACGIH: No ingredient of this product, present at levels greater than or equal to 0.1%, is identified as a carcinogen or potential carcinogen by ACGIH.

Section 3. Composition / Information on Ingredients

Common Name Ethyl Mercaptan
Synonym(s) Ethanethiol; ETSH
Formula C_2H_6S
CAS Number 75-08-1

COMPONENT	CAS NUMBER	CONCENTRATION
Ethyl Mercaptan	75-08-1	99%

Section 4. First Aid Measures

General Advice: Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance. Symptoms of poisoning may appear several hours later. Do not leave the victim unattended.
Inhalation: Call a physician or poison control center immediately. If unconscious place in recovery position and seek medical advice.
Skin Contact: If on skin, rinse well with water. If on clothes, remove clothes.
Eye Contact: Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
Ingestion: Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

Section 5. Firefighting Measures

Flash Point: -48°C (-54°F)
Auto-ignition Temperature: 295°C (563°F)
Suitable Extinguishing Media: Alcohol-resistant foam. Carbon dioxide (CO_2). Dry chemical.
Unsuitable Extinguishing Media: High volume water jet.
Specific Hazards during Firefighting: Do not allow run-off from firefighting to enter drains or water courses.
Special Protective Equipment for Firefighters: Wear self-contained breathing apparatus for firefighting if necessary.
Further Information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons, in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
Fire and Explosion Protection: Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces, and sources of ignition.
Hazardous Decomposition Products: Carbon oxides. Sulfur oxides.

NFPA Rating
Health: 2
Flammability: 4
Reactivity: 0

Section 6. Accidental Release Measures

Personal Precautions: Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental Precautions: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods for Cleaning Up: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see section 13).

Section 7. Handling and Storage

Handling
Advice on Safe Handling: Avoid formation of aerosol. Do not breathe vapors/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.
Advice on Protection against Fire and Explosion: Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

Storage
Requirements for Storage Areas and Containers: Prevent unauthorized access. No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

Section 8. Exposure Controls / Personal Protection

Workplace Control Parameters
US
ACGIH: TWA: 0.5 ppm
OSHA Z-1: C: Approx. 10 ppm, 25 mg/m^3 (Ceiling limit is to be determined from breathing-zone air samples)
OSHA Z-1-A: TWA: 0.5 ppm, 1 mg/m^3

Immediately Dangerous to Life or Health Concentrations (IDLH): 500 ppm (Update 1995/03/01)

Engineering Measures: Adequate ventilation to control airborne concentrations below the exposure guidelines/limits.

Personal Protective Equipment
Respiratory Protection: Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection

when working with this material if exposure to harmful levels of airborne material may occur, such as: Air-Purifying Respirator for Organic Vapors. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Hand Protection: The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Eye Protection: Eye wash bottle with pure water. Tightly fitting safety goggles. Wear face-shield and protective suit for abnormal processing problems.
Skin and Body Protection: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate. Remove and wash contaminated clothing before re-use. Skin should be washed after contact. Flame retardant protective clothing. Workers should wear antistatic footwear.
Hygiene Measures: Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

Section 9. Physical and Chemical Properties

Appearance
Form: Liquid
Physical State: Liquid
Color: Colorless
Odor: Repulsive

Safety Data
Flash Point: -48°C (-54°F)
Lower Explosion limit: 2.8% (V)
Upper Explosion limit: 18% (V)

Oxidizing Properties: No
Auto Ignition Temperature: 295°C (563°F)
Molecular Formula: C_2H_6S
Molecular Weight: 62.14 g/mol
pH: Not applicable
Pour Point: No data available
Boiling Point/Boiling Range: 35°C (95°F)
Vapor Pressure: 16.20 PSI at 37.8°C (100.0°F)
Relative Density: 0.84, 15.6°C (60.1°F)
Water Solubility: Negligible
Partition Coefficient: n-octanol/water: No data available
Viscosity, Kinematic: No data available

Relative Vapor Density: 2.1(Air = 1.0)
Evaporation Rate: 1
Percent Volatile: > 99%

Section 10. Stability and Reactivity

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of Hazardous Reactions
Conditions to Avoid: Heat, flames and sparks.
Materials to Avoid: May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Other Data: No decomposition if stored and applied as directed.

Section 11. Toxicological Information

Acute Oral Toxicity
Ethyl Mercaptan
LD50: 682 mg/kg
Species: Rat
Sex: Male
Method: Fixed Dose Method

Acute Inhalation Toxicity
Ethyl Mercaptan
LC50: > 2.52 mg/L
Exposure Time: 4 hrs
Species: Rat
Sex: Male and female
Test Atmosphere: Vapor
Method: OECD Test Guideline 403

Acute Dermal Toxicity
Ethyl Mercaptan
LD50: > 2,000 mg/kg
Species: Rat
Sex: Male
Method: OECD Test Guideline 402

Ethyl Mercaptan
Skin Irritation: Mild skin irritation

Ethyl Mercaptan
Eye Irritation: Mild eye irritation

Sensitization
Ethyl Mercaptan: Causes sensitization. Information given is based on data obtained from similar substances.

Repeated Dose Toxicity
Ethyl Mercaptan
Species: Rat
Sex: Male and female
Application Route: Inhalation
Dose: 0, 25, 100, 400 ppm
Exposure Time: 13 wks
Number of Exposures: 6 hr/d, 5 d/wk
NOEL: 100 ppm
Lowest Observable Effect Level: 400 ppm
Method: OECD Guideline 413
Information given is based on data obtained from similar substances.

Species: Rat
Sex: Male and female
Application Route: Oral
Dose: 0, 10, 50, 200 mg/kg
Exposure Time: 42 - 53 days
NOEL: 50 mg/kg
Method: OECD Guideline 422
Information given is based on data obtained from similar substances.

Reproductive Toxicity
Ethyl Mercaptan
Species: Rat
Sex: Male and female
Application Route: Oral diet
Dose: 0, 10, 50, 200 mg/kg
Exposure Time: 42 - 53 Days
Number of Exposures: Once daily
Method: OECD Guideline 422
NOAEL Parent: 200 mg/kg
NOAEL F1: 50 mg/kg
Information given is based on data obtained from similar substances.

Developmental Toxicity
Ethyl Mercaptan

Species: Rat
Application Route: Inhalation
Dose: 0, 0.037, 0.28, or 0.56 mg/L
Number of Exposures: 6 hrs/d
Test Period: GD 6-19
Method: OECD Guideline 414
NOAEL Teratogenicity: > 0.56 mg/l
Information given is based on data obtained from similar substances.

Species: Rat
Application Route: Inhalation
Dose: 0, 10, 100, 200 ppm
Number of Exposures: 6 hrs/d
Test Period: GD 6-19
Method: OECD Guideline 414
NOAEL Teratogenicity: > 200 ppm
NOAEL Maternal: > 200 ppm
Information given is based on data obtained from similar substances.

Aspiration Toxicity
Ethyl Mercaptan: May be harmful if swallowed and enters airways.

CMR Effects
Ethyl Mercaptan
Carcinogenicity: Not available
Mutagenicity: Not mutagenic in Ames Test.
Teratogenicity: Animal testing did not show any effects on fetal development.
Reproductive Toxicity: Animal testing did not show any effects on fertility.

Ethyl Mercaptan
Further information: Solvents may degrease the skin.

Section 12. Ecological Information

Toxicity to Fish
Ethyl Mercaptan: 2.4 mg/L
Exposure Time: 96 h
Species: *Oncorhynchus mykiss* (rainbow trout)
Method: OECD Test Guideline 203

Toxicity to Daphnia and Other Aquatic Invertebrates
Ethyl Mercaptan
EC50: < 0.1 mg/L
Exposure Time: 48 h

Species: *Daphnia magna* (Water flea)
Static Test Method: OECD Test Guideline 202

Toxicity to Algae
Ethyl Mercaptan
EC50: 3 mg/L
Exposure Time: 72 h
Species: *Pseudokirchneriella subcapitata* (green algae)
Method: OECD Test Guideline 201

Elimination Information (Persistence and Degradability)
Bioaccumulation: This material is not expected to bioaccumulate.
Biodegradability: This material is not expected to be readily biodegradable.

Results of PBT Assessment
Ethyl Mercaptan: Non-classified PBT substance, Non-classified vPvB substance
Additional Ecological Information: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

Section 13. Disposal Considerations

Waste Treatment Methods: Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations.

Section 14. Transport Information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the MSDS and the bill of lading.

US DOT (United States Department of Transportation)
UN2363, Ethyl Mercaptan, 3, I, Marine Pollutant, (Ethyl Mercaptan)
IMO/IMDG (International Maritime Dangerous Goods)
UN2363, Ethyl Mercaptan, 3, I, (-48°C), Marine Pollutant, (Ethyl Mercaptan)
IATA (International Air Transport Association)
UN2363, Ethyl Mercaptan, 3, I

ADR (Agreement on Dangerous Goods by Road (Europe))
UN2363, Ethyl Mercaptan, 3, I, (D/E), Environmentally Hazardous

RID (Regulations Concerning the International Transport of Dangerous Goods (Europe))
UN2363, Ethyl Mercaptan, 3, I, Environmentally Hazardous

ADN (European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways)
UN2363, Ethyl Mercaptan, 3, I, Environmentally Hazardous

Section 15. Regulatory Information

National Legislation
SARA 311/312 Hazards: Acute Health Hazard; Fire Hazard

CERCLA Reportable Quantity: This material does not contain any components with a CERCLA RQ.

SARA 302 Threshold Planning Quantity
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 302 Reportable Quantity: This material does not contain any components with a SARA 302 RQ.

SARA 304 Reportable Quantity: This material does not contain any components with a section 304 EHS RQ.

SARA 313 Ingredients
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act
Ozone-Depletion Potential: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations
Pennsylvania Right to Know: Ethyl Mercaptan - 75-08-1
New Jersey Right to Know: Ethyl Mercaptan - 75-08-1
California Prop. 65 Ingredients: This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification Status
Europe REACH: On the inventory, or in compliance with the inventory
United States of America TSCA: On the inventory, or in compliance with the inventory
Canada DSL: On the inventory, or in compliance with the inventory
Australia AICS: On the inventory, or in compliance with the inventory
New Zealand NZIoC: On the inventory, or in compliance with the inventory
Japan ENCS: On the inventory, or in compliance with the inventory
Korea KECI: On the inventory, or in compliance with the inventory
Philippines PICCS: On the inventory, or in compliance with the inventory
China IECSC: On the inventory, or in compliance with the inventory

Section 16. Other Information

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

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