

ETHYLENE GLYCOL MONOMETHYL ETHER

1. Product Identification and Manufacture Information.

Trade Names/Synonyms: Ethylene glycol monomethyl ether; 2-methoxyethanol

CAS NO.: 109-86-4

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2. Composition/Information on Ingredients

Percentage: 100.00%

Usage: Solvent.

3. Hazards Identification

Hazard Class: 3.3 High flashpoint flammable liquid

Harmful if swallowed, inhaled or absorbed through skin/eyes.

Harm to Health: Poisoning may be caused when skin contact or through respiratory tract and alimentary canal, and will be harmful to nervous system and kidney function. Cough, headache, abdominal pain, vomit may occur. Irritate eyes and mucous membrane, de-fat from skin.

Flammable and Explosive Hazard: Flammable and irritative.

4. First Aid Measures

Skin Contact:

Immediately flush skin completely with plenty of soap and water for enough time while removing contaminated clothing and shoes. Call a physician

Eye Contact:

Immediately flush eyes with plenty of running water or physiological saline for enough time, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Inhalation:

Immediately remove to fresh air, if breathing is difficult, give oxygen, if not breathing, give artificial respiration. Call a physician.

Ingestion:

Drink enough warm water to induce vomiting immediately. Call a physician.

5. Fire Fighting Measures

Flammability and Explosion: Flammability and explosion will be caused by fire and high temperature, or contacting with oxidizers. Potential explosive peroxide may be created when contact with air or under shine.

Burn Decomposition Products: Carbon monoxide, carbon dioxide.

Extinguishing measures: Remove the containers from the fired place to open and safe place; Spray water to cool the containers until the fire fighting is over. Withdraw immediately in case of rising sound from venting safety device or any discoloration of containers due to fire.

Fire Extinguishing Media:

Anti-deliquescent foam, dry chemical, or carbon dioxide, sand.

6. Accidental Release Measures

Keep all the staffs from the polluted area to safety place, and isolate the hazard area, keep unnecessary and unprotected personnel from entering. Remove all sources of ignition.

In the event of a fire, emergency staffs should wear static resistant clothing and self-contained breathing apparatus with facepiece operated in the pressure demand or other positive pressure mode. Don't contact the leaked material. Cut off the source of leakage and prevent the leaked material enter sewer or drain as well as some other limited space. Small spill: Absorb with sand or other non-combustible material, also can use plenty of water to flush, then dilute the polluted water and put them into worthless water system. Large spill: Dike or sap for disposal and cover with foam to reduce vapor harm. Collect spilled material in appropriate container or tank by explosionproof pump, reclaim or transport to rubbish disposal place.

7. Handling and Storage

The manufacturing process should be windtight, local and/or general exhaust ventilation is necessary. The operators should be trained strictly, and should obey relative rule, an air-purifying respirator (a half-face organic vapor respirator), chemical safety goggles, static resistant clothing and rubber oilproof gloves shall be worn. Away from any area where the fire or high temperature hazard may be acute and No Smoking in the place. The ventilating device should meet the requirements of explosionproof, prevent the vapor from leaking into the work place. Avoid contact with oxidizer. Pay enough attention to the flow speed when fill into drums, containers or tanks, and should use grounding device to prevent static accumulation. Loading and unloading should be carefully, no damage to package and container. Relative enough fire and leak fighting device should be equipped. Note maybe there is some harmful leftover in the emptied container.

Store in a cool, dry well-ventilated location, away from any area where the fire or high temperature hazard may be acute. The temperature in the storage house should be less than 30 °C. The product shall be stored in a tightly closed container, avoid contact with air. It can't be mixed with oxidizer. All the lighting and ventilating device should meet the requirements of explosionproof. Any sparking tools and equipments are not permitted to use in it. Relative enough leak fighting device and collecting material should be equipped.

8. Exposure Controls/Personal Protection

China MAC (mg/m³): no prescription

United State of America ACGIH TLV-TWA 5 ppm (skin)

Engineering Control: The manufacturing process should be windtight, local and/or general exhaust ventilation is necessary. Provide an emergency eye wash foundation and quick drench shower in the immediate work area.

Breathing System Protection: If the vapor concentration exceed standard, an air-purifying respirator (a half-face organic vapor respirator) shall be worn. When work in high concentration, use a full-face piece positive-pressure, air-supplied respirator.

Eye Protection: Use chemical safety goggles.

Body Protection: Wear appropriate static resistant clothing.

Hand Protection: Wear rubber oilproof gloves.

Others: No smoking, no eating and no drinking in the work area. Have a shower bath and change clothing after work. Pay enough attention to personal sanitary.

9. Physical and Chemical Properties

Appearance and Odor: Colorless liquid, a little odor.

Melting Point (°C): -86.5

Specific Gravity (water=1): 0.97

Boiling Point (°C): 124.5

Specific Gravity (air=1): 2.62

Saturated Vapor Press (kPa): 0.83 (20 °C)

Fire Heat (kJ/mol): 1841.7

Critical Temperature (°C): No data

Critical Press (Mpa): No data

Coefficient of Water/Oil Distribution: -0.503

Flash Point (°C) : 39

Autoignition: 285 °C

LEL [% (V/V)]: 2.3%

UEL [% (V/V)]: 24.5%

Min. Flammability (mJ): no data

Max. Explosion Press (Mpa): no data

Solubility: Mixable with water and soluble in glycol, ketone and hydrocarbon.

10. Stability and Reactivity

Stability: Stable under ordinary conditions of use and storage. Contact with oxidizer will create explosive peroxide.

Hazardous Polymerization: Will not occur

Conditions to Avoid: High temperature, air and flame

Incompatibilities: Acyl chlorin, acid anhydride, strong oxidizer.

Burn Decomposition Products: Carbon monoxide, carbon dioxide.

11. Toxicological Information

Toxicity Data:

Oral Human LDLO: 3380mg/kg; Inhalation TCLO: 25 ppm

Oral Rat LD50: 2370mg/kg; Inhalation LC50: 1500 ppm/7H

Oral Little Rat LD50: 2560 mg/kg; Inhalation LC50: 1480 ppm/7H

Skin Rabbit LD50: 1280 mg /kg

Irritation: Irritative to eyes and skin.

Subacute and Chronic Toxicity: Oral rat: 0.1ml/kg/day, 7 days, can see temporary hematuria. Raise the dose, will cause exhaustion, tremble, albuminuria and hematuria. Internal postmortem examination can see the kidney is injured heavily. Rat exposed in 1.05g/m³, 7 hours/day, 5 days/week, 1 month later can see the young white blood cell rise.

Carcinogen: No data

Mutation for dominant death causing test: Oral rat 500mg/kg. Sperm morphology: Oral rat 1500mg/kg.

Incur Distortion: No data.

Other Toxicity: The mini dose for oral rat (TDLO): 175mg/kg (pregnant 7~13 days), may cause the cardiovascular (recycle) system dysplasia. The mini dose for little oral rat (TDLO): 250mg/kg (1 day, male), will affect the sperm grow (including heritance, sperm form, vigor, quantity).

12.Ecological Information

No data.

13.Disposal Considerations

Disposal Method: Fire the wasted liquid in a controlled speed when the liquid without peroxide was concentrated. Fire the wasted liquid with a secure distance in open container when the liquid with peroxide was concentrated.

14.Transport Information

Hazard Commodity Description No.: 33569

UN No.: 1188

Labeling Requirements: Flammable liquid

Packing Group: III

Packing Methods: Steel drum with small open; Glass bottle with whorl open, glass bottle with iron cap, plastic bottle or metal drum packed in wooden carton.

Attention: Relative enough fire and leak fighting device should be equipped in the vehicle when transport. The transporting time in the morning or evening in summer shall be better for secure consideration. Ground chain should be connected with the tank, clapboard with holes should be arranged in the tank to deduce shaking for preventing static accumulation. The product shall not be mixed with oxide or any other chemicals for food use. No insolating, drenching and high temperature during transportation. When stop in the midway, the vehicle should be away from fire, heat source and high temperature place. Fire blocking device should be equipped to the exhaust pipe. Any sparking tools and equipments are not permitted to use in loading and unloading. When transport on road or highway, the vehicle should run in accordance with the regulated route, and shall not stop at populous area. If ran in railway, the products can't be placed at will. No transporting by wooden boat, cement boat in bulk.

15.Regulatory Information

Product Description: Ethylene glycol monomethyl ether

In Current Chinese Chemical Inventory: Yes

Severe Toxin Classification, Sort and Description No. (GB57-93): Not available

Hazard Commodity Description No. (GB12268-90): 33569

Fatal Hazard Sources Labeling: No regulation

16.Other Information

All the information in the MSDS is from our latest database, they are only for users' reference, users shall prepare its own operating regulation in accordance with practical situation.

Prepared by: Shanghai Chemical Toxin Counseling Service of China National Economics & Trade
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