

IN CASE OF TRANSPORTATION EMERGENCY CONTACT:

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1. IDENTIFICATION

PRODUCT NAME: HEXYLENE GLYCOL
CAS #: 107-41-5
SYNONYM: 2-METHYL-2,4-PENTANEDIOL; 2,4-DIHYDROXY-2-METHYLPENTANE; DIONLANE; ALPHA, ALPHA, ALPHA'-TRIMETHYLTRIMTHYLENE GLYCOL
CHEMICAL DESCRIPTION: ALIPHATIC POLYHYDRIC ALCOHOL

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: CLEAR, COLORLESS VISCOUS LIQUID WITH NO ODOR

SIGNAL WORD: WARNING!

Hydroscopic (absorbs moisture from the air). Causes serious eye irritation. Causes mild skin irritation. May cause central nervous system effects.

Potential Acute Health Effects:

Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Slightly hazardous in case of skin contact (sensitizer), of ingestion.

Potential Chronic Health Effects:

Slightly hazardous in case of skin contact (sensitizer). CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, the nervous system, liver. Repeated or prolonged exposure to the substance can produce target organs damage.

3. COMPOSITION

Composition:	CAS #	% by Weight
Name Hexylene Glycol	107-41-5	100

Toxicological Data on Ingredients: Hexylene Glycol: ORAL (LD50): Acute: 3700 mg/kg [Rat]. 3097 mg/kg [Mouse]. 3200 mg/kg [Rabbit]. DERMAL (LD50): Acute: 8560 mg/kg [Rabbit].

4. FIRST AID MEASURES

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

5. FIRE FIGHTING MEASURES

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: 303.69 (579 F) - 305.85°C (582.5°F)

Flash Points:

OPEN CUP: 93.333°C (200°F) (Lewis, 1993); 96.1 C (205 F) (Lewis, 1996); 98.3 C (209 F) (NIOSH, 1997); 102 C (215 F) (NFPA, 1994) .

Flammable Limits: LOWER: 1.2% - 1.3% UPPER: 8.1% - 9.0%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances: Slightly flammable to flammable in presence of open flames and sparks, of heat.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

6. ACCIDENTAL RELEASE MEASURES

Small Spill:

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:

Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

7. HANDLING AND STORAGE

Handling

Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not use in areas without adequate ventilation. Somewhat hygroscopic (absorbs moisture from the air). Wear appropriate personal protective equipment. Avoid contact with eyes, skin and clothing. Avoid breathing mist or vapor. Wash thoroughly after handling. Observe good industrial hygiene practices.

Storage

Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Store in tightly closed original container in a dry and cool place. No smoking in the area. Keep away from food, drink and animal feedingstuffs. Store away from incompatible materials (see Section 10 of the MSDS).

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Occupational exposure limits

US. ACGIH Threshold Limit Values

Material	Type	Value
Hexylene Glycol (Cas # 107-41-5)	Ceiling	25 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face protection

Chemical goggles and face shield are recommended. Eye wash fountain and emergency showers are recommended.

Skin protection

Wear chemical protective equipment that is specifically recommended by the manufacturer. Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. Impervious gloves. Advice should be sought from glove suppliers.

Respiratory protection

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. A NIOSH/MSHA approved air-purifying respirator with the appropriate chemical cartridges or a positive-pressure, air-supplied respirator may be used to reduce exposure. Advice should be sought from respiratory protection specialists.

Hand protection

Gloves impervious to the material are recommended. Advice should be sought from glove suppliers.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Clear, colorless liquid.

Physical state Liquid.

Form Viscous liquid.

Color Clear colorless or nearly colorless

Odor Odorless.

Odor threshold Not available.

pH Not available

Vapor pressure . 0.05mm Hg at 20°C

Vapor density 4.1

Boiling point 388.4 °F (198 °C)

Melting point/Freezing point -58 °F (-50 °C)

Solubility (water) Soluble

Specific gravity 0.93 at 17 °C

Relative density Not available.

Flash point 208.4 °F (98.0 °C) Closed Cup

Flammability limits in air, upper, % by volume 7.4

Flammability limits in air, lower, % by volume 1.3

Auto-ignition temperature 572 °F (300 °C)

Evaporation rate Not available

Partition coefficient (n-octanol/water) . 0.6

Molecular weight 118.06 g/mol

Molecular formula C6-H14-O2

Other data

Density 0.93 g/cm³

Dynamic viscosity 34 mPa.s

Dynamic viscosity temp 68 °F (20 °C)

10. STABILITY AND REACTIVITY

Reactivity

The product is stable and non-reactive under normal conditions of use, storage and transport. Hygroscopic; absorbs moisture from the air.

Chemical stability

Material is stable under normal conditions.

Conditions to avoid

Keep away from heat, sparks and open flame. Avoid contact with incompatible materials.

Incompatible materials

Strong oxidizing agents. Strong acids. Perchloric Acid.

Hazardous decomposition products

None known, refer to hazardous combustion products in Section 5. The following may be released during a fire: Carbon oxides.

Possibility of hazardous reactions

Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Entry: Absorbed through skin. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:

Acute oral toxicity (LD50): 3097 mg/kg [Mouse]. Acute dermal toxicity (LD50): 8560 mg/kg [Rabbit].

Chronic Effects on Humans: May cause damage to the following organs: kidneys, the nervous system, liver.

Other Toxic Effects on Humans:

Hazardous in case of skin contact (irritant), of inhalation. Slightly hazardous in case of skin contact (sensitizer), of ingestion.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects: Skin: Causes moderate skin irritation with redness and swelling. May cause dermatitis. It may be absorbed by the skin. Eyes: Direct contact with liquid causes moderate to severe eye irritation experienced as discomfort, pain, excess blinking, and tear production, marked excess redness, and swelling of conjunctiva. May cause corneal injury. Vapors may cause eye irritation. Inhalation: May cause irritation of the respiratory tract with mild burning sensation in the nose, throat and lungs, coughing, wheezing, shortness of breath, pulmonary edema. Breathing of high concentration of vapors may also cause central nervous system (CNS) depression resulting in dizziness, lightheadedness, headache, nausea, loss of coordination. Continued inhalation may result in unconsciousness and death. Ingestion: May cause digestive tract (mouth, throat, and esophagus) irritation. May cause nausea, vomiting and diarrhea. May affect behavior/central nervous system (CNS excitation followed by profound CNS depression - dizziness, incoordination, headache, drowsiness, memory loss, withdrawal, irritability, fatigue, sleep disturbances). It may also affect the peripheral nervous system and cause muscle weakness and "pins and needles" sensation). Chronic Potential Health Effects: Skin: Repeated or prolonged skin contact may cause dermatitis, skin sensitization. Ingestion: Repeated or prolonged ingestion may cause liver and kidney damage. It may also affect behavior/central nervous system/peripheral nervous system and cause symptoms similar to that of acute ingestion.

12. ECOLOGICAL INFORMATION

Ecotoxicological data

PRODUCT:		SPECIES	TEST RESULTS
HEXYLENE GLYCOL (CAS 107-41-5)			
AQUATIC			
ACUTE			
ALGAE	EC 50	Green Algae (<i>Scenedesmus subspicatus</i>)	>429 mg/l, 72 hours
Crustacea	EC 50	Water Flea (<i>Daphnia magna</i>)	2800 mg/l, 48 hours
Fish	LC 50	Mosquitofish (<i>Gambusia</i>)	8510 mg/l, 96 hours
Chronic			
Algae	EC 50	Green Algae (<i>Scenedesmus subspicatus</i>)	>429 mg/l, 72 hours

Ecotoxicity : The product should not be allowed to enter drains, water courses or the soil.

Environmental effects : The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Aquatic toxicity : The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability : Inherently biodegradable.

Partition coefficient : 0.58

Mobility in environmental media:

High water solubility indicates a high mobility in soil.

13. DISPOSAL CONSIDERATIONS

Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

15. REGULATORY INFORMATION

Federal and State Regulations:

Illinois toxic substances disclosure to employee act: Hexylene Glycol Pennsylvania RTK: Hexylene Glycol Minnesota: Hexylene Glycol Massachusetts RTK: Hexylene Glycol Massachusetts spill list: Hexylene Glycol New Jersey: Hexylene Glycol TSCA 8(b) inventory: Hexylene Glycol

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada): CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):

R36/38- Irritating to eyes and skin. S15- Keep away from heat. S36/37/39- Wear suitable protective clothing, gloves and eye/ face protection.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 2 Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 2

Reactivity: 0

Specific hazard:

Protective Equipment:

Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

16. OTHER INFORMATION

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall CISCO be liable for any claims, losses, or damages of any third party or for lost profits or any special,

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