

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	<p>Harmful compound, minimize exposure. Irritating to skin, eyes, and the respiratory system. Combustible material; avoid heat and sources of ignition. Hygroscopic -- keep container tightly sealed. Store under nitrogen.</p>	

Section I. Chemical Product and Company Identification

Chemical Name	Diethylene Glycol Monomethyl Ether		
Catalog Number	M0537	Supplier	TCl America 9211 N. Harborgate St. Portland OR 1-800-423-8616
Synonym	2-(2-Methoxyethoxy)ethanol		
Chemical Formula	HOCH ₂ CH ₂ OCH ₂ CH ₂ OCH ₃		
CAS Number	111-77-3	In case of Emergency Call	Chemtrec® (800) 424-9300 (U.S.) (703) 527-3887 (International)

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Diethylene Glycol Monomethyl Ether	111-77-3	Min. 99.0 (GC)	Not available.	Rat LD ₅₀ (oral) 4ml/kg Rabbit LD ₅₀ (dermal) 2500mg/kg Rat LD ₅₀ (intraperitoneal) 2722mg/kg Rat LD ₅₀ (inhalation) >2gm/m ³ /1H

Section III. Hazards Identification

Acute Health Effects	<p>Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.</p>
Chronic Health Effects	<p>CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY Reproductive Effects: Rat TDLo (oral) 6600 mg/kg, female 7-17 days of pregnancy. Toxic Effects: Effects on Embryo or Fetus - Fetotoxicity. Specific Developmental Abnormalities - Musculoskeletal system. Effects on Newborn - Physical. Rat TDLo (oral) 19800 mg/kg, female 7-17 days of pregnancy. Toxic Effects: Maternal Effects - Parturition Effects on Fertility - Post-implantation mortality. Specific Developmental Abnormalities - Cardiovascular. Mouse TDLo (oral) 32 gm/kg, female 7-14 days of pregnancy. Toxic Effects: Effects on Fertility - Post-implantation mortality. Effects on Newborn - Live birth index. Effects on Newborn - Viability index. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.</p>

Section IV. 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. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Inhalation	If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.
Ingestion	INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. SEEK IMMEDIATE MEDICAL ATTENTION in case of ingestion of a radioactive material.

Section V. Fire and Explosion Data

Flammability	Combustible.	Auto-Ignition	Not available.
Flash Points	87°C (188.6°F).	Flammable Limits	LOWER: 1.38% UPPER: 22.7%
Combustion Products	These products are toxic carbon oxides (CO, CO ₂).		
Fire Hazards	Not available.		
Explosion Hazards	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	Combustible material. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. Consult with local fire authorities before attempting large scale fire-fighting operations.		

Section VI. Accidental Release Measures

Spill Cleanup Instructions	Harmful material. Irritating material. Combustible material. Hygroscopic material. Store under nitrogen. Keep away from heat. Mechanical exhaust required. Stop leak if without risk. Finish cleaning the spill by rinsing any contaminated surfaces with copious amounts of water. Consult federal, state, and/or local authorities for assistance on disposal.
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Section VII. Handling and Storage

Handling and Storage Information	HARMFUL. IRRITANT. COMBUSTIBLE. HYGROSCOPIC. STORE UNDER NITROGEN. Keep away from heat. Mechanical exhaust required. Avoid excessive heat and light. DO NOT ingest. Do not breathe gas/fumes/ vapor/spray. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Always store away from incompatible compounds such as oxidizing agents.
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Section VIII. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.
Personal Protection	Splash goggles. Lab coat. Vapor respirator. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. Be sure to use a MSHA/NIOSH approved respirator or equivalent.
	
Exposure Limits	Not available.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Liquid. (Clear, colorless.)	Solubility	Miscible with water, alcohol, glycerol, ether, acetone, DMF.
Specific Gravity	1.02 (water=1)		
Molecular Weight	120.15	Partition Coefficient	Not available.
Boiling Point	190 to 194°C (374 to 381.2°F)	Vapor Pressure	0.2mm Hg (@ 20°C)
Melting Point	-70°C (-94°F)	Vapor Density	4.14 (Air = 1)
Refractive Index	1.4264 @ 27°C	Volatility	Not available.
Critical Temperature	Not available.	Odor	Mild-ether like
Viscosity	Not available.	Taste	Bitter

Section X. Stability and Reactivity Data

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light.
Incompatibilities	Reactive with strong oxidizing agents.

Section XI. Toxicological Information	
RTECS Number	KL6125000
Routes of Exposure	Eye Contact. Ingestion. inhalation.
Toxicity Data	Rat LD ₅₀ (oral) 4ml/kg Rabbit LD ₅₀ (dermal) 2500mg/kg Rat LD ₅₀ (intraperitoneal) 2722mg/kg Rat LD ₅₀ (inhalation) >2gm/m ³ /1H
Chronic Toxic Effects	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY Reproductive Effects: Rat TDLo (oral) 6600 mg/kg, female 7-17 days of pregnancy. Toxic Effects: Effects on Embryo or Fetus - Fetotoxicity. Specific Developmental Abnormalities - Musculoskeletal system. Effects on Newborn - Physical. Rat TDLo (oral) 19800 mg/kg, female 7-17 days of pregnancy. Toxic Effects: Maternal Effects - Parturition Effects on Fertility - Post-implantation mortality. Specific Developmental Abnormalities - Cardiovascular. Mouse TDLo (oral) 32 gm/kg, female 7-14 days of pregnancy. Toxic Effects: Effects on Fertility - Post-implantation mortality. Effects on Newborn - Live birth index. Effects on Newborn - Viability index. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.
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Section XII. Ecological Information	
Ecotoxicity	Not available.
Environmental Fate	Diethylene glycol monomethyl ether's production and use as a brake fluid component, an aviation fuel antiicing additive, a solvent, a chemical intermediate or as a pesticide additive may result in its release to the environment through various waste streams. If released to the atmosphere, diethylene glycol monomethyl ether will exist solely in the vapor phase in the ambient atmosphere, based on a measured vapor pressure of 0.25 mm Hg at 25 deg C. Vapor-phase diethylene glycol monomethyl ether is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals with a half-life of about 15 hours. An estimated Koc value of 1 suggests that diethylene glycol monomethyl ether will have very high mobility in soil. Volatilization from moist soil surfaces is not expected based on an estimated Henry's Law constant of 1.7X10 ⁻¹¹ atm-cu m/mole. Volatilization may be significant from dry soil surfaces based on the vapor pressure of this compound. Diethylene glycol monomethyl ether is not expected to undergo hydrolysis or direct photolysis in the environment because of a lack of hydrolyzable groups or adsorption of UV light. Biodegradation may be an important removal mechanism of diethylene glycol monomethyl ether from aerobic soil and water; diethylene glycol monomethyl ether showed losses of 0, 21, and 66% of the theoretical BOD in BOD tests when incubated at 20 deg C for 5, 10, and 20 days, respectively. In water, diethylene glycol monomethyl ether is not expected to adsorb to sediment or particulate matter based on its Koc value. This compound is not expected to not volatilize from water surfaces given its estimated Henry's Law constant. Bioconcentration in aquatic organisms is expected to be low based on an estimated BCF value of 0. Occupational exposure may occur through dermal contact or inhalation at workplaces where diethylene glycol dimethyl ether is produced or used. Limited monitoring data indicate that non-occupational exposures can occur from the ingestion of contaminated drinking water supplies and exposure to products containing this compound.

Section XIII. Disposal Considerations	
Waste Disposal	Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

Section XIV. Transport Information	
DOT Classification	Not a DOT controlled material (United States).
PIN Number	Not available.
Proper Shipping Name	Not available.
Packing Group (PG)	Not available.
DOT Pictograms	

Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This compound is ON the EPA Toxic Substances Control Act (TSCA) inventory list. This product is subject to SARA section 313 reporting requirements. (8a PAIR/8d)
WHMIS Classification (Canada)	CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
EINECS Number (EEC)	203-906-6
EEC Risk Statements	R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. R47- May cause birth defects.
Japanese Regulatory Data	ENCS No. 2-0422, 7-0097

Section XVI. Other Information

Version 1.0
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Notice to Reader

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, household, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. 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 chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.

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