

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	Combustible material; avoid heat and sources of ignition. Irritating to skin, eyes, and the respiratory system. Harmful compound, minimize exposure. May form explosive peroxides. Store under nitrogen.	

Section I. Chemical Product and Company Identification

Chemical Name	Diethylene Glycol Diethyl Ether		
Catalog Number	B0489	Supplier	TCI America 9211 N. Harbortgate St. Portland OR 1-800-423-8616
Synonym	Bis(2-ethoxyethyl) Ether		
Chemical Formula	(C ₂ H ₅ OCH ₂ CH ₂) ₂ O		
CAS Number	112-36-7	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 Diethyl Ether	112-36-7	Min. 98.0(GC)	Not available.	Rat LD ₅₀ (oral) 4970mg/kg Rabbit LD ₅₀ (dermal) 6700µl/kg Guinea Pig LD ₅₀ (oral) 1850mg/kg

Section III. Hazards Identification

Acute Health Effects	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. Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
Chronic Health Effects	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY/REPRODUCTIVE EFFECTS : Mouse TDLo (Oral) 24gm/kg, female, 7-14 Days of pregnancy. Effects on Newborn - Stillbirth. Effects on Newborn - Growth statistics. Mouse TDLo (Oral) 3gm/kg, female, 6-15 Days of pregnancy. Toxic Effects: Effects on Embryo or Fetus - Fetotoxicity. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

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	Wash with soap and water. Get medical attention if irritation develops.
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.

Section V. Fire and Explosion Data

Flammability	Combustible.	Auto-Ignition	Not available.
Flash Points	82°C (179.6°F).	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO ₂).		
Fire Hazards	Not available.		

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Emergency phone number (800) 424-9300

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 liquid. 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	Combustible material. Irritating material. Harmful material. May form explosive peroxides. 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	COMBUSTIBLE. IRRITANT. HARMFUL. MAY FORM EXPLOSIVE PEROXIDES. 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, acids.
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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. (Colorless.)	Solubility	Very soluble in water, alcohol, ethyl alcohol and other organic solvents. Soluble in ethyl ether and hydrocarbons.
Specific Gravity	0.91 (water=1)		
Molecular Weight	162.23	Partition Coefficient	Not available.
Boiling Point	188°C (370.4°F)	Vapor Pressure	0.1 kPa (@ 25°C)
Melting Point	-44.3°C (-47.7°F)	Vapor Density	5.6 (Air = 1)
Refractive Index	1.4115 @ 20 °C	Volatility	Not available.
Critical Temperature	Not available.	Odor	Not available.
Viscosity	Not available.	Taste	Not available.

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, strong acids.

Section XI. Toxicological Information

RTECS Number	KN3160000
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Rat LD ₅₀ (oral) 4970mg/kg Rabbit LD ₅₀ (dermal) 6700µl/kg Guinea Pig LD ₅₀ (oral) 1850mg/kg
Chronic Toxic Effects	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY/REPRODUCTIVE EFFECTS : Mouse TDLo (Oral) 24gm/kg, female, 7-14 Days of pregnancy. Effects on Newborn - Stillbirth. Effects on Newborn - Growth statistics. Mouse TDLo (Oral) 3gm/kg, female, 6-15 Days of pregnancy. Toxic Effects: Effects on Embryo or Fetus - Fetotoxicity. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

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Acute Toxic Effects	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. Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
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Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	Diethylene glycol diethyl ether's production and use as a high boiling reaction medium, and as a solvent for nitrocellulose, lacquers, resins, and organic syntheses may result in its release to the environment through various waste streams. Diethylene glycol diethyl ether has been identified in drinking water, ground water, river water, and effluent from a waste water treatment plant. If released to soil, diethylene glycol diethyl ether is expected to have very high mobility because of its high water solubility. Volatilization of diethylene glycol diethyl ether is not expected to be important from moist soil surfaces but may occur from dry soil surfaces based on this compound's estimated Henry's Law constant of 4.2×10^{-9} atm-cu m/mol and a measured vapor pressure of 0.3825 mm Hg, respectively. Biodegradation of diethylene glycol diethyl ether is not expected to be an important fate process in soil or water since a biodegradation study conducted with sewage seed indicated little biodegradation. If released to water, diethylene glycol diethyl ether is not expected to adsorb to suspended solids and sediment. Diethylene glycol diethyl ether is expected to be essentially non-volatile from water surfaces based on its estimated Henry's Law constant. An estimated bioconcentration of 1 suggests that diethylene glycol diethyl ether will be low in aquatic organisms. If released to the atmosphere, diethylene glycol diethyl ether will exist as a vapor based on its vapor pressure. Vapor-phase diethylene glycol diethyl ether is degraded in the atmosphere by reaction with photochemically produced hydroxyl radicals with an estimated half-life of about 14 hours. Particulate-phase diethylene glycol diethyl ether may be physically removed from the air by wet deposition.

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.
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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.
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)	203-963-7
EEC Risk Statements	R19- May form explosive peroxides. R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin.
Japanese Regulatory Data	2-433

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.