

Material Safety Data Sheet

Diethylene Glycol Monoethyl Ether

ACC# 07332

Section 1 - Chemical Product and Company Identification

MSDS Name: Diethylene Glycol Monoethyl Ether

Catalog Numbers: D51 4, D51-4, D514

Synonyms: 2-(2-Ethoxyethanol)-ethanol; carbitol; carbitol cellosolve; diethylene glycol ether; ethyl carbitol; DGME; ethyl digol

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
111-90-0	Diethylene glycol monoethyl ether	100.0	203-919-7

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless liquid. Flash Point: 187 deg F.

Caution! Combustible liquid and vapor. May be harmful if swallowed. May cause respiratory tract irritation. May cause skin irritation. May cause eye irritation. May cause digestive tract irritation. May form explosive peroxides. May cause kidney damage. This substance has caused adverse reproductive and fetal effects in animals.

Target Organs: Kidneys.

Potential Health Effects

Eye: May cause eye irritation. May cause transient corneal injury. Causes redness and pain.

Skin: May cause mild skin irritation.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause kidney damage. May cause central nervous system depression. May be harmful if swallowed.

Inhalation: Low hazard for usual industrial handling. May cause kidney damage.

Chronic: No information found.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation develops, get medical aid.

Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation: Remove from exposure and move to fresh air immediately. Get medical aid.

Notes to Physician: Monitor kidney function closely.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Combustible liquid. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Containers may explode when heated.

Extinguishing Media: In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Cool containers with flooding quantities of water until well after fire is out.

Flash Point: 187e deg F (86.11 deg C)

Autoignition Temperature: 400 deg F (204.44 deg C)

Explosion Limits, Lower: 1.2@ 135C

Upper: 23.5@ 182C

NFPA Rating: (estimated) Health: 1; Flammability: 1; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of

ignition. Provide ventilation.

Section 7 - Handling and Storage

Handling: Use with adequate ventilation. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Store protected from light. If peroxide formation is suspected, do not open or move container. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage: Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Diethylene glycol monoethyl ether	none listed	none listed	none listed

OSHA Vacated PELs: Diethylene glycol monoethyl ether: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: colorless

Odor: mild odor - fruity odor

pH: Not available.

Vapor Pressure: .14 mm Hg @ 20 C

Vapor Density: 4.64

Evaporation Rate: <0.01 (butyl acetate=1)

Viscosity: 3.9 cP 25 C

Boiling Point: 396 deg F

Freezing/Melting Point: -134 deg F

Decomposition Temperature: Not available.

Solubility: soluble in water.

Specific Gravity/Density: .9902 @20C

Molecular Formula: C₆H₁₄O₃

Molecular Weight: 134.0962

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. Explosive peroxides may form on concentration. Peroxides can be detonated by friction, impact, or heating.

Conditions to Avoid: Ignition sources, excess heat, strong oxidants.

Incompatibilities with Other Materials: Strong oxidizing agents, strong acids, isocyanates.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 111-90-0: KK8750000

LD50/LC50:

CAS# 111-90-0:

Dermal, guinea pig: LD50 = >32 gm/kg;
Draize test, rabbit, eye: 500 mg Moderate;
Draize test, rabbit, eye: 125 mg Mild;
Draize test, rabbit, skin: 500 mg/24H Mild;
Inhalation, rat: LC50 = >5240 mg/m³/4H;
Oral, mouse: LD50 = 6600 uL/kg;
Oral, mouse: LD50 = 7250 mg/kg;
Oral, rabbit: LD50 = 3620 mg/kg;
Oral, rat: LD50 = 5500 uL/kg;
Oral, rat: LD50 = 7500 mg/kg;
Skin, rabbit: LD50 = 4200 uL/kg;
Skin, rabbit: LD50 = 8.5 mL/kg/2H;
Skin, rat: LD50 = 6 mL/kg;

Carcinogenicity:

CAS# 111-90-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found

Teratogenicity: No information found

Reproductive Effects: Feeding studies with rats have shown fetal effects in the urogenital system.

Mutagenicity: No information found

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: 26.6g/L; 96H; Fish: Rainbow trout: LC50 = 13,420 mg/L; 96 Hr.; Unspecified conditions Fish: Bluegill/Sunfish: LC50 = 10,000 mg/L; 96 Hr.; Static conditions, 23 degrees C Water flea Daphnia: LC50 = 4026 mg/L; 48 Hr.; Unspecified No data available.

Environmental: AQUATIC FATE: Diethylene glycol monoethyl ether is not expected to volatilize from water surfaces. TERRESTRIAL FATE: Aerobic screening test data indicate that rapid aerobic biodegradation is likely to be the most important mechanism for the removal of diethylene glycol monoethyl ether from soil. Biodegradation of 48% to 87% were reported in non-acclimated cultures incubated for 20 days. Alcohols and ethers are generally resistant to hydrolysis.

Physical: No information available.

Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	Not regulated as a hazardous material	No information available.
Hazard Class:		
UN Number:		
Packing Group:		

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 111-90-0 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 111-90-0: Effective 4/13/89, Sunset 12/19/95

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 111-90-0: fire, reactive.

Section 313

This material contains Diethylene glycol monoethyl ether (listed as Glycol ethers), 100.0%, (CAS# 111-90-0) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 111-90-0 (listed as Glycol ethers) is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 111-90-0 can be found on the following state right to know lists: Pennsylvania, (listed as Glycol ethers), Minnesota.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XI

Risk Phrases:

R 36 Irritating to eyes.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

WGK (Water Danger/Protection)

CAS# 111-90-0: 1

Canada - DSL/NDSL

CAS# 111-90-0 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B3, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 111-90-0 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 6/09/1999

Revision #3 Date: 10/03/2005

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 Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.