

# SAFETY DATA SHEET



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## DIETHYLENE GLYCOL MONOBUTYL ETHER

**SDS No. M0069**

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Diethylene Glycol Monobutyl Ether

Synonyms: 2-(2-Butoxyethoxy)ethanol

Recommended Use: This product is recommended for laboratory and manufacturing use only. It is not recommended for drug, food or household use.

### 2. HAZARDS IDENTIFICATION



**Classification:**

Skin Irritation: GHS Category 3

Eye Irritation: GHS Category 2A

**Label Elements**

Signal Word: WARNING!

Hazard Statements:

H227 – Combustible liquid and vapor.

H303 – May be harmful if swallowed.

H316 – Causes mild skin irritation.

H319 – Causes serious eye irritation.

H333 – May be harmful if inhaled.

Precautionary Statements:

P210 – Keep away from heat/sparks/open flames/hot surfaces - No smoking.

P281 – Use personal protective equipment as required.

P303+P361+P353 – If on skin or hair: Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.

**Emergency Overview**

Causes severe eye irritation. May be harmful if swallowed or inhaled. May cause skin and respiratory tract irritation. May affect the central nervous system. Combustible liquid and vapor. Target Organs: Central nervous system and kidneys.

HMIS Rating:

Health – 2\* Flammability – 2 Physical Hazard – 0 PPE – User supplied

NOTE: HMIS ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. These ratings are based on the inherent properties of this chemical under expected conditions of normal use and are not intended to be used in emergency situations. PPE is determined by the user based on their needs and conditions.

**3. COMPOSITION AND INFORMATION ON INGREDIENTS**

<u>Ingredient</u>	<u>CAS No</u>	<u>Percent</u>	<u>Hazardous</u>
Diethylene Glycol Monobutyl Ether	112-34-5	>99%	Yes

**4. FIRST-AID MEASURES**

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have victim lean forward. Get medical aid.

Skin Contact: Remove any contaminated clothing. Flush skin with water for at least 15 minutes. Get medical attention in irritation develops and persists.

Eye Contact: Check for and remove contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention.

Notes to Physician: Treat symptomatically and supportively.

**5. FIRE FIGHTING MEASURES**

Flammability: Not expected to be a fire hazard.

Auto-ignition Temperature: 204° C (399° F)

Flash Point: 78° C (172° F)

Flammable Limits: Lower Limit – 0.85, Upper Limit – 24.6

Products of Combustion: May decompose into irritating and toxic gases under fire conditions (carbon monoxide, carbon dioxide).

Specific Fire Hazards: As in any fire, always wear self-contained breathing apparatus in pressure-demand (MSA/NIOSH approved or equivalent), and full protective gear. Containers may explode in heat of fire. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Liquid floats on water and may travel to a source of ignition and spread the fire.

Fire Fighting Media: In case of fire, use water spray, dry chemical, chemical foam, or alcohol-resistant foam.

National Fire Protective Association: Health - 2, Flammability - 2, Reactivity - 0

NOTE: NFPA ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. They are for use by emergency personnel to address the hazards that are presented by short term, acute exposure to this product under fire, spill, or similar emergencies. Ratings involve data and interpretations that may vary from company to company.

**6. ACCIDENTAL RELEASE MEASURES**

Absorb spilled liquid with sorbent pads, socks, or other inert material such as vermiculite, sand, or earth. Use spark-proof tools. Provide ventilation to the affected area and remove all ignition sources. A vapor suppressing foam may be used to reduce vapors. Approach the spill from upwind and pick up absorbed material and place it in a suitable container. Always use proper personal protective equipment as described in section 8.

**7. HANDLING AND STORAGE**

Precautions: Always use proper personal protective equipment as described in section 8. Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Remove contaminated clothing and wash before reuse. Ground or bond

containers before transferring material. Empty containers contain product residue (liquid and vapor) and can be dangerous. Use with adequate ventilation. Avoid breathing vapor or mist.

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

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or using the material should be equipped with eyewash station and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Personal Protection: Wear protective chemical goggles or other appropriate eye protection. Use butyl rubber gloves and protective clothing to prevent skin exposure. A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever possible. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Exposure Limits: None established

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance: Clear, colorless liquid.

Odor: Faint butyl odor

Molecular Formula:  $\text{CH}_3(\text{CH}_2)_3\text{OCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OH}$

Molecular Weight: 162.23

Auto-ignition Temperature: 204° C (399° F)

Flash Point: 78° C (172° F)

Flammable Limits: Lower Limit – 0.85, Upper Limit – 24.6

pH: Not available

Boiling Point: 231° C @ 760 mm Hg

Freezing/Melting Point: -68° C

Decomposition Temperature: Not available.

Specific Gravity: 0.950 g/cm<sup>3</sup>

Vapor Density (Air=1): 5.6

Vapor Pressure: 0.02 mm Hg at 25° C

Evaporation Rate (Butyl acetate = 1): 0.01.

Viscosity: Not available.

Solubility: Miscible in water

## 10. STABILITY AND REACTIVITY

Stability: Stable under normal temperature and pressure. After long term storage, chemicals containing similar functional groups form peroxides of unknown stability.

Conditions to Avoid: Excess heat, flames, ignitions sources, incompatible substances.

Incompatibility With Various Substances: High temperatures in the presence of strong bases. Acids. Do not distill to dryness. Incompatible to heat, flame, strong oxidizers and alkalis.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, peroxides.

Hazardous Polymerization: Will not occur.

## 11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, skin absorption, skin contact

Acute Exposure Hazards:

INHALATION HAZARD: May cause irritation to the respiratory tract. Symptoms may include coughing, sore throat, labored breathing, and chest pain. May be absorbed into the bloodstream with symptoms similar to ingestion.

**INGESTION HAZARD:** Large oral doses may cause irritation to the gastrointestinal tract. Ingestion may cause signs of intoxication, such as nausea, headache, incoordination, dizziness, drowsiness, and slurred speech depending on the amount ingested.

**SKIN CONTACT HAZARD:** Brief contact is not irritating. Prolonged skin contact causes mild to moderate local redness and swelling. Can be absorbed through the skin with prolonged and widespread contact.

**EYE CONTACT HAZARD:** Causes irritation, redness, and pain.

**Chronic Exposure Hazards:** Small, repeated exposures of this material are generally more toxic than single, large exposures. Chronic exposures may produce central nervous system and kidney effects.

**Animal Toxicity:**

Oral rat LD50: 5660 mg/kg;

Skin rabbit LD50: 2700 mg/kg;

Irritation eye rabbit, standard Draize: 20 mg severe;

**Carcinogenicity:** Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65

**Epidemiology:** No information available.

**Teratogenicity:** No information available.

**Reproductive Effects:** No information available.

**Mutagenicity:** No information available.

**Neurotoxicity:** No information available.

**Other Studies:** No information available.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity:** The LC50/96-hour values for fish are over 100 mg/l. This material is not expected to be toxic to aquatic life.

**Environmental Fate:** When released into the soil, this material is not expected to evaporate significantly. When released into the soil, this material may leach into groundwater. When released into the soil, this material may biodegrade to a moderate extent. When released into water, this material is not expected to evaporate significantly. When released into water, this material may biodegrade to a moderate extent. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life of less than 1 day.

## 13. DISPOSAL CONSIDERATIONS

Material that cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use or contamination of this product may change the waste management options. Waste generators must decide if discarded material is a hazardous waste. State and local disposal regulations may differ from federal disposal definitions found in 40 CFR 261.3. Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. TRANSPORT INFORMATION

Not regulated for transportation.

## 15. REGULATORY INFORMATION

**US Federal Regulations:**

TSCA: CAS# 112-34-5 is listed on the TSCA Inventory.

Health and Safety Reporting List: Not listed.

Chemical Test Rules: Not listed.

Section 12b: : Not listed.

TSCA Significant New Use Rule: Not listed.

CERCLA Hazardous Substances: CAS# 112-34-5: Not listed

SARA Section 302: Does not have a TPQ

SARA Codes: CAS# 112-34-5 – acute, chronic fire

Section 313: Diethylene glycol monobutyl ether, listed as glycol ethers (CAS# 112-73-2) is subject to SARA Title III Section 313 40 CFR 373 reporting requirements.

Clean Air Act: CAS# 112-34-5 (listed as glycol ethers) is listed as a hazardous air pollutant (HAP). It is not a Class 1 Ozone Depleter. It is not a Class 2 Ozone Depleter.

Clean Water Act: CAS# 112-34-5 is not listed as a Hazardous Substance. It is not a Priority Pollutant. It is not a Toxic Pollutant.

OSHA: Not considered highly hazardous by OSHA.

US State Regulations:

CAS# 112-34-5 is on the following state right-to-know lists: New Jersey (listed as glycol ethers) and Pennsylvania (listed as glycol ethers).

California Prop 65: No Significant Risk Level: Not listed

Canada:

DSL/NDSL: CAS# 112-34-5 is listed on Canada's DSL list.

WHMIS: This product has a WHMIS classification of D2A, D2B. This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and this MSDS contains all the information required by those regulations.

Ingredient Disclosure List: CAS# 112-34-5 is not listed on Canada's Ingredient Disclosure list.

DSCL (EEC):

Hazard Symbols: Not available

Risk Phrases: Not available.

Safety Phrases: S23 – do not breathe vapors; S24/25 – Avoid contact with skin and eyes.

WGK (Water Danger/protection): CAS# 112-34-5: Not available

## 16. OTHER INFORMATION

Originally Prepared: 6/30/2006

Last Revised: 10/25/2012 – Modified hazard symbols and signal word based on review of physical characteristics of the product.

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