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## Material Safety Data Sheet

### Butyldiglycol

#### Section 1: Chemical Product and Company Identification

**Molecular formula:** C<sub>8</sub>H<sub>18</sub>O<sub>3</sub>

**CAS Nr:** 112-34-5

**EINECS:** 203-961-6

**Molecular weight:** 162.23 g/mol

**Synonyms:** Diethylene glycol monobutyl ether;butyl carbitol;butyl diglycol.

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#### Section 2: Composition and Information on Ingredients

**Composition:**

Name	CAS #	% by Weight
{2-(2-}Butoxyethoxy)ethanol	112-34-5	100

**Toxicological Data on Ingredients:**

2-(2-Butoxyethoxy)ethanol: ORAL (LD50): Acute: 5660 mg/kg [Rat.]. 2400 mg/kg [Mouse]. 2000 mg/kg [Guinea pig].  
DERMAL (LD50): Acute: 2700 mg/kg [Rabbit.].

#### Section 3: Hazards Identification

**Potential Acute Health Effects:**

Hazardous in case of eye contact (irritant), of ingestion, of inhalation.

Slightly hazardous in case of skin contact (irritant,permeator).

**Potential Chronic Health Effects:**

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS:

Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to blood, kidneys, liver, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

#### Section 4: First Aid Measures

##### Eye Contact:

Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention.

##### Skin Contact:

Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

**Serious Skin Contact:** Not available.

##### 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.

#### Section 5: Fire and Explosion Data

**Flammability of the Product:** Combustible.

**Auto-Ignition Temperature:** 227.78°C (442°F)

**Flash Points:** CLOSED CUP: 78°C (172.4°F). OPEN CUP: 100°C (212°F) (Cleveland).

**Flammable Limits:** LOWER: 0.85% UPPER: 24.6%

**Products of Combustion:** These products are carbon oxides (CO, CO<sub>2</sub>).

##### Fire Hazards in Presence of Various Substances:

Flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.

##### 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:** COMBUSTIBLE

**Special Remarks on Explosion Hazards:** Not available.

#### Section 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:**

Combustible material. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

**Section 7: Handling and Storage**

**Precautions:**

Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Avoid contact with eyes. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.

**Storage:**

Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

**Section 8: 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 stations and safety showers are proximal to the work-station location.

**Personal Protection:**

Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves (impervious).

**Personal Protection in Case of a Large Spill:**

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:** Not available.

**Section 9: Physical and Chemical Properties**

**Physical state and appearance:** Liquid. (Liquid.)

**Odor:** Characteristic Faint Butyl odor (Slight.)

**Taste:** Not available.

**Molecular Weight:** 162.23 g/mole

**Color:** Colorless.

**pH (1% soln/water):** 7 [Neutral.]

**Boiling Point:** 230.4°C (446.7°F)

**Melting Point:** -68.1 (-90.6°F)

**Critical Temperature:** Not available.

**Specific Gravity:** 0.9536 (Water = 1)

**Vapor Pressure:** 0 kPa (@ 20°C)

**Vapor Density:** 5.58 (Air = 1)

**Volatility:** Not available.

**Odor Threshold:** Not available.

**Water/Oil Dist. Coeff.:** The product is more soluble in oil; log(oil/water) = 0.6

**Ionicity (in Water):** Not available.

**Dispersion Properties:** See solubility in water, diethyl ether, acetone.

**Solubility:**

Easily soluble in diethyl ether, acetone. Soluble (miscible) in cold water, hot water.

## Section 10: Stability and Reactivity Data

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Excess heat, ignition sources (flames, sparks), incompatible materials

**Incompatibility with various substances:** Reactive with oxidizing agents.

**Corrosivity:** Non-corrosive in presence of glass.

**Special Remarks on Reactivity:** Not available.

**Special Remarks on Corrosivity:** Not available.

**Polymerization:** Will not occur.

## Section 11: Toxicological Information

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

**Toxicity to Animals:**

Acute oral toxicity (LD50): 2000 mg/kg [Guinea pig]. Acute dermal toxicity (LD50): 2700 mg/kg [Rabbit].

**Chronic Effects on Humans:** May cause damage to the following organs: blood, kidneys, liver, central nervous system (CNS).

**Other Toxic Effects on Humans:**

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

**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 skin irritation with redness. It does not appear to be absorbed through intact skin in toxic amounts. Causes moderate eye irritation. May cause conjunctivitis and transient corneal injury.

Inhalation: Inhalation for brief periods has no significant effect. May cause respiratory tract and mucous membrane irritation. Remote possibility of pulmonary edema

Ingestion: May cause gastrointestinal tract irritation with abdominal pain, headache, nausea, vomiting, and diarrhea. May affect behavior/central nervous system, (general anesthetic, central nervous system depression), blood/bone marrow (intravascular hemolysis and bone marrow depression), respiration (tachypnea, hyperventilation), urinary system/ kidneys (uremia, transient polyuria and then oliguria, anuria, acute renal failure, acute tubular necrosis), liver, spleen.

Chronic Potential Health Effects: Ingestion:

Prolonged or repeated ingestion may affect metabolism (weight loss), behavior, blood (pigmented or nucleated red blood cells), brain, central nervous system. Other symptoms may include acidosis, and cyanosis (bluish discoloration of the skin due to deficient oxygenation of the blood), and quick shallow breathing. Target Organ Data

Behavioral (General Anesthetic) Gastrointestinal (Other Changes) Kidney,Ureter,Bladder(Other Changes)  
Only Selected Registry of Toxic Effects Of Chemical Substances (Rtecs) Data is presented here,see actual entry in  
ptecls in rtecs for complete information

### Section 12: Ecological Information

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Products of Biodegradation:**

Possibly hazardous short term degradation products are not likely.

However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The product itself and its products of degradation are not toxic.

**Special Remarks on the Products of Biodegradation:** Not available.

### Section 13: Disposal Considerations

**Waste Disposal:**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

### Section 14: Transport Information

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

**Identification:** Not applicable.

**Special Provisions for Transport:** Not available.

### Section 15: Other Regulatory Information

**Federal and State Regulations:**

TSCA 8(b) inventory: 2-(2-Butoxyethoxy)ethanol TSCA 8(a) IUR: 2-(2-Butoxyethoxy)ethanol

**Other Regulations:**

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the

European Inventory of Existing Commercial Chemical Substances.

**Other Classifications:**

**WHMIS (Canada):**

CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F). CLASS D-2B: Material causing other toxic effects (TOXIC).

**DSCL (EEC):**

R36- Irritating to eyes. S2- Keep out of the reach of children. S24- Avoid contact with skin. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S46- If swallowed, seek medical advice immediately and show this container or label.

**HMIS (U.S.A.):**

**Health Hazard:** 2

**Fire Hazard:** 2

**Reactivity:** 0

**Personal Protection:** j

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

**Health:** 1

**Flammability:** 2

**Reactivity:** 0

**Specific hazard:**

**Protective Equipment:**

Gloves (impervious). Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

Wear appropriate respirator when ventilation is inadequate. Splash goggles.

**Section 16: Other Information**

**Other Special Considerations:** Not available.

**Created:** 10/09/2005 04:27 PM

**Last Updated:** 05/21/2016 12:00 PM

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