



## Diethylene Glycol Monobutyl Ether

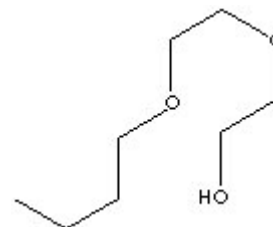
# Butyl CARBITOL

Chemical Formula:  $C_8H_{18}O_3$

CAS Registry Number: 112-34-5

Molecular Weight: 162.23

### PRODUCT INFORMATION



#### Synonyms:

- Butoxyethoxyethanol
- Butoxydiethylene Glycol
- 2-(2-Butoxyethoxy)-Ethanol
- Butyl Oxitol Glycol Ether
- O-Butyl Diethylene Glycol
- Diethylene Glycol N-Butyl ether
- Butadigol
- Butyl Diglycol
- Butyl Dioxitol
- Butoxydiglycol
- butoxydiethylene glycol

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## Physical and Chemical Properties

**Appearance:** Clear, colorless liquid.

**Odor:** Faint butyl odor.

**Solubility:** Miscible in water.

**Specific Gravity:** 0.95 @ 20°C/20°C

**pH:** No information found.

**% Volatiles by volume @ 21°C (70°F):** No information found.

**Boiling Point:** 231°C (448°F)

**Melting Point:** -68°C (-90°F)

**Vapor Density (Air=1):** 5.6

**Vapor Pressure (mm Hg):** 0.02 @ 20°C (68°F)

**Evaporation Rate (BuAc=1):** < 0.01

## Stability and Reactivity

### **Stability:**

Stable under ordinary conditions of use and storage.

### **Hazardous Decomposition Products:**

Carbon dioxide and carbon monoxide may form when heated to decomposition.

### **Hazardous Polymerization:**

Will not occur.

### **Incompatibilities:**

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

### **Conditions to Avoid:**

Heat, flames, ignition sources and incompatibles.

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## Applications

- Latex coalescent in water-based architectural and industrial coatings.
- Coupling agent and solvent in house-hold and industrial cleaners, rust removers, hard surface cleaners and disinfectants.
- Primary solvent in solvent-based silk screen printing inks.
- Coupling solvent for resins and dyes in water-based printing inks.
- Solvent for ball point and felt tip pen inks, and textile dyeing and printing.
- Coalescent for latex adhesives.
- Deactivator, stabilizer for agricultural pesticides

### **Features**

- Powerful solvency
- Coalescing ability
- High dilution ratio
- Low evaporation rate
- Low viscosity
- Wide range of applications



## Hazards Identification

### Emergency Overview

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**WARNING! CAUSES SEVERE EYE IRRITATION. MAY BE HARMFUL IF SWALLOWED OR INHALED. MAY AFFECT CENTRAL NERVOUS SYSTEM. MAY CAUSE IRRITATION TO SKIN AND RESPIRATORY TRACT. COMBUSTIBLE LIQUID AND VAPOR.**

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Health Rating: 1 - Slight

Flammability Rating: 2 - Moderate

Reactivity Rating: 0 - None

Contact Rating: 3 - Severe

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER

Storage Color Code: Red (Flammable)

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### Potential Health Effects

#### **Inhalation:**

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:**

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:**

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:**

Causes irritation, redness, and pain.

#### **Chronic Exposure:**

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

#### **Aggravation of Pre-existing Conditions:**

No information found.

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## 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.

#### **Skin Contact:**

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.

#### **Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.



## **Fire Fighting Measures**

### **Fire:**

Flash point: 78°C (172°F) CC

Autoignition temperature: 204°C (399°F)

Flammable limits in air % by volume:

l<sub>el</sub>: 0.85; u<sub>el</sub>: 24.6

Combustible Liquid.

### **Explosion:**

Above flash point, vapor-air mixtures are explosive within flammable limits noted above.

### **Fire Extinguishing Media:**

Dry chemical, alcohol foam or carbon dioxide. Water may be ineffective. Water spray may be used to keep fire exposed containers cool.

### **Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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## **Accidental Release Measures**

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

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## **Handling and Storage**

Protect against physical damage. Outside or detached storage is preferred. Inside storage should be in a standard flammable liquids storage room or cabinet. Separate from oxidizing materials. Storage and use areas should be No Smoking areas. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

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## **Exposure Controls/Personal Protection**

### **Airborne Exposure Limits:**

None established.

### **Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

### **Personal Respirators (NIOSH Approved):**

For conditions of use where exposure to the substance is apparent and engineering controls are not feasible, consult an industrial hygienist. For emergencies, or instances where the exposure levels are not known, use a full-



facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Skin Protection:**

Wear protective gloves and clean body-covering clothing.

**Eye Protection:**

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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## Ecological Information

**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.

**Environmental Toxicity:**

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

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## Other Information

**NFPA Ratings:** Health: 2 Flammability: 2 Reactivity: 0

**Label Hazard Warning:**

**WARNING! CAUSES SEVERE EYE IRRITATION. MAY BE HARMFUL IF SWALLOWED OR INHALED. MAY AFFECT CENTRAL NERVOUS SYSTEM. MAY CAUSE IRRITATION TO SKIN AND RESPIRATORY TRACT. COMBUSTIBLE LIQUID AND VAPOR.**

**Label Precautions:**

Do not get in eyes.  
Avoid contact with skin and clothing.  
Avoid breathing vapor.  
Keep away from heat and flame.  
Keep container closed.  
Use with adequate ventilation.  
Wash thoroughly after handling.

**Label First Aid:**

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In all cases, get medical attention.