

MSDS Number: **O8764** \* \* \* \* \* *Effective Date: 05/25/06* \* \* \* \* \* *Supercedes: 01/28/05*

**MSDS** *Material Safety Data Sheet*

From: Mallinckrodt Baker, Inc.  
222 Red School Lane  
Phillipsburg, NJ 08865



24 Hour Emergency Telephone: 908-859-2151  
CHEMTREC: 1-800-424-9300

National Response in Canada  
CANUTEC: 613-996-6666

Outside U.S. and Canada  
Chemtec: 703-527-3887

**NOTE:** CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

# DIETHYLENE GLYCOL

## 1. Product Identification

**Synonyms:** 2,2'-Oxydiethanol; 2,2'-Oxybisethanol; 2,2' Dihydroxydiethyl ether; CELLOSOLVE®; glycol ether; Glycolethyl ether

**CAS No.:** 111-46-6

**Molecular Weight:** 106.14

**Chemical Formula:** C<sub>4</sub>H<sub>10</sub>O<sub>3</sub>

**Product Codes:**

J.T. Baker: S856

Mallinckrodt: 11413, 4911

## 2. Composition/Information on Ingredients

| Ingredient        | CAS No   | Percent   |
|-------------------|----------|-----------|
| Hazardous         |          |           |
| -----             | -----    | -----     |
| -----             |          |           |
| Diethylene Glycol | 111-46-6 | 99 - 100% |
| Yes               |          |           |

## 3. Hazards Identification

## Emergency Overview

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**WARNING! HARMFUL IF SWALLOWED. MAY CAUSE IRRITATION TO SKIN AND EYES.**

SAF-T-DATA<sup>(tm)</sup> Ratings (Provided here for your convenience)

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Health Rating: 2 - Moderate (Life)

Flammability Rating: 1 - Slight

Reactivity Rating: 1 - Slight

Contact Rating: 1 - Slight

Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

Storage Color Code: Green (General Storage)

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## Potential Health Effects

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### Inhalation:

Low inhalation hazard unless heated because of low vapor pressure.

### Ingestion:

Low acute toxicity. Probable lethal dose to humans is 0.5-5 g/kg. Causes nerve depression, liver and kidney lesions and anuria (urination retardation). Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea.

### Skin Contact:

May be an irritant to skin on prolonged exposure.

### Eye Contact:

May be an irritant to eyes and surrounding tissue.

### Chronic Exposure:

Liver and kidney lesions and damage.

### Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye problems or impaired liver or kidney function may be more susceptible to the effects of the substance.

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## 4. First Aid Measures

### Inhalation:

Remove to fresh air. Not expected to require first aid measures.

### Ingestion:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician.

### Skin Contact:

Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.

### Eye Contact:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Call a physician if irritation persists.

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## 5. Fire Fighting Measures

### **Fire:**

Flash point: 124C (255F) CC

Autoignition temperature: 229C (444F)

Flammable limits in air % by volume:

lel: 1.6; uel: 10.8

Fire is possible at elevated temperatures or by contact with an ignition source.

### **Explosion:**

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

### **Fire Extinguishing Media:**

Powder, alcohol foam, water spray or carbon dioxide.

### **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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## 6. Accidental Release Measures

Ventilate area of leak or spill. 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. 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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## 7. Handling and Storage

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. 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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## 8. Exposure Controls/Personal Protection

### **Airborne Exposure Limits:**

AIHA Workplace Environmental Exposure Level (WEEL): Vapor and Aerosol = 50ppm; Aerosol, only = 10mg/m<sup>3</sup>.

**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. 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):**

If the exposure limit is exceeded, a half-face respirator with an organic vapor cartridge and particulate filter (NIOSH type P95 or R95 filter) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with an organic vapor cartridge and particulate filter (NIOSH P100 or R100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. Please note that N series filters are not recommended for this material. For emergencies or instances where the exposure levels are not known, use a full-face piece 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. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. Physical and Chemical Properties

**Appearance:**

Clear, colorless liquid.

**Odor:**

Odorless.

**Solubility:**

Infinitely soluble.

**Specific Gravity:**

1.118 @ 20C/20C

**pH:**

No information found.

**% Volatiles by volume @ 21C (70F):**

100

**Boiling Point:**

244 - 245C (471 - 473F)

**Melting Point:**

-6.5C (21F)

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

3.66

**Vapor Pressure (mm Hg):**

1 @ 91.8C (198F)

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

No information found.

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## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**

Toxic gases and vapors may be released if involved in a fire. Carbon dioxide and carbon monoxide may form when heated to decomposition.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Strong oxidizers, strong acids and strong bases.

**Conditions to Avoid:**

Incompatibles.

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## 11. Toxicological Information

Oral rat LD50: 12565 mg/kg. Skin rabbit LD50: 11.89 g/kg Irritation: eye rabbit, standard Draize: 50 mg mild. Investigated as a tumorigen and reproductive effector.

| Ingredient<br>Category       | ---NTP Carcinogen--- |             | IARC |
|------------------------------|----------------------|-------------|------|
|                              | Known                | Anticipated |      |
| Diethylene Glycol (111-46-6) | No                   | No          | None |

## 12. Ecological Information

**Environmental Fate:**

No information found.

**Environmental Toxicity:**

No information found.

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## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may

differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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## 14. Transport Information

Not regulated.

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## 15. Regulatory Information

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-----\Chemical Inventory Status - Part
1\-----
  Ingredient                TSCA   EC    Japan
Australia
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Diethylene Glycol (111-46-6)   Yes   Yes   Yes
Yes

-----\Chemical Inventory Status - Part
2\-----
  Ingredient                Korea  --Canada--
  Phil.                    DSL    NDSL
-----
Diethylene Glycol (111-46-6)   Yes   Yes   No
Yes

-----\Federal, State & International Regulations - Part
1\-----
  Ingredient                -SARA 302-  -----SARA
  Chemical Catg.           RQ    TPQ    List
-----
Diethylene Glycol (111-46-6)   No    No    No    Glycol
ether

-----\Federal, State & International Regulations - Part
2\-----
  Ingredient                CERCLA  -RCRA-  -TSCA-
                          261.33  8 (d)
-----
Diethylene Glycol (111-46-6)   No     No     No

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Chemical Weapons Convention: No      TSCA 12(b): No      CDTA: No  
 SARA 311/312: Acute: Yes      Chronic: Yes      Fire: No      Pressure: No  
 Reactivity: No      (Pure / Liquid)

**Australian Hazchem Code:** None allocated.

**Poison Schedule:** None allocated.

**WHMIS:**

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

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## 16. Other Information

**NFPA Ratings:** Health: 1 Flammability: 1 Reactivity: 0

**Label Hazard Warning:**

WARNING! HARMFUL IF SWALLOWED. MAY CAUSE IRRITATION TO SKIN AND EYES.

**Label Precautions:**

Wash thoroughly after handling.

Avoid contact with eyes, skin and clothing.

**Label First Aid:**

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician. In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. Call a physician if irritation develops or persists.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

MSDS Section(s) changed since last revision of document include: 9.

**Disclaimer:**

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