

Material Safety Data Sheet

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Version 1.3

According to 91/155/EEC

1 - Product and Company Information

| | |
|-------------------|---|
| Product Name | DIETHYLENE GLYCOL MONOBUTYL ETHER, 99.2+% |
| Product Number | 537640 |
| Company | Sigma-Aldrich Pte Ltd #08-01 Citilink Warehouse Singapore 118529 Singapore |
| Technical Phone # | 65 271 1089 |
| Fax | 65 271 1571 |

2 - Composition/Information on Ingredients

| | | |
|---------------------------------|--|-----------|
| Product Name | CAS # | EC no |
| DI(ETHYLENE GLYCOL) BUTYL ETHER | 112-34-5 | 203-961-6 |
| Formula | C8H18O3 | |
| Molecular Weight | 162.23 AMU | |
| Synonyms | BUCB * Butoxydiethylene glycol * Butoxydiglycol * 2-(2-Butoxyethoxy)ethanol * Butyl carbitol * O-Butyl diethylene glycol * Butyl dioxitol * Diethylene glycol n-butyl ether * Diethylene glycol monobutyl ether * Diglycol monobutyl ether * Dowanol DB * Ektasolve DB * Glycol ether DB * Jeffersol DB * Poly-Solv DB | |

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT
Irritating to eyes.

4 - First Aid Measures

AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give
artificial respiration. If breathing is difficult, give oxygen.

AFTER SKIN CONTACT

In case of contact, immediately wash skin with soap and copious
amounts of water.

AFTER EYE CONTACT

In case of contact, immediately flush eyes with copious amounts
of water for at least 15 minutes.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is
conscious. Call a physician.

5 - Fire Fighting Measures

EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Conditions of Storage: Keep tightly closed. Store under nitrogen.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

Mechanical exhaust required. Safety shower and eye bath.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

EXPOSURE LIMITS - DENMARK

| Source | Type | Value |
|--------|------|-----------|
| OEL | TWA | 100 mg/m3 |

EXPOSURE LIMITS - GERMANY

| Source | Type | Value |
|----------|------|-----------|
| TRGS 900 | OEL | 100 mg/m3 |

Remarks: =1=

Remarks: Y

EXPOSURE LIMITS - SWEDEN

| Source | Type | Value |
|--------|-------------|-----------|
| | LLV (Level) | 100 mg/m3 |
| | | 15 ppm |

EXPOSURE LIMITS - SWITZERLAND

| Source | Type | Value |
|--------|------|-----------|
| OEL | OEL | 100 mg/m3 |

Remarks: C

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.
Hand Protection: Compatible chemical-resistant gloves.
Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

| | | |
|-----------------------|--|----------------------------|
| Appearance | Physical State: Liquid Color: Colorless | |
| Property | Value | At Temperature or Pressure |
| pH | N/A | |
| BP/BP Range | 231 °C | 760 mmHg |
| MP/MP Range | -68 °C | |
| Flash Point | 99 °C | Method: closed cup |
| Flammability | N/A | |
| Autoignition Temp | 204 °C | |
| Oxidizing Properties | N/A | |
| Explosive Properties | N/A | |
| Explosion Limits | Lower: 0.9 % Upper: 6.2 % | |
| Vapor Pressure | 30 mmHg | 130 °C |
| SG/Density | 0.953 g/cm3 | |
| Partition Coefficient | Log Kow: 0.56 | |
| Viscosity | N/A | |
| Vapor Density | 5.6 g/l | |
| Saturated Vapor Conc. | N/A | |
| Evaporation Rate | N/A | |
| Bulk Density | N/A | |
| Decomposition Temp. | N/A | |
| Solvent Content | N/A | |
| Water Content | < 0.1 % | |
| Surface Tension | N/A | |
| Conductivity | N/A | |
| Miscellaneous Data | N/A | |
| Solubility | N/A | |

10 - Stability and Reactivity

STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

11 - Toxicological Information

RTECS NUMBER: KJ9100000

ACUTE TOXICITY

LD50
Oral
Rat
5660 mg/kg

LD50
Oral

Mouse
2400 mg/kg

LD50
Intraperitoneal
Mouse

850 MG/KG

Remarks: Lungs, Thorax, or Respiration:Other changes. Kidney, Ureter, Bladder:Changes in tubules (including acute renal failure, acute tubular necrosis). Blood:Changes in spleen.

LD50
Oral
Rabbit
2200 mg/kg

LD50
Skin
Rabbit
2700 mg/kg

LD50
Oral
Guinea pig
2000 mg/kg
Remarks: Behavioral:General anesthetic. Gastrointestinal:Other changes. Kidney, Ureter, Bladder:Other changes.

IRRITATION DATA

Eyes
Rabbit
20 mg
Remarks: Severe irritation effect

Eyes
Rabbit
20 mg
24H
Remarks: Moderate irritation effect

SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: Causes eye irritation.
Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.
Ingestion: May be harmful if swallowed.

TARGET ORGAN INFORMATION

Liver. Kidneys. Blood.

12 - Ecological Information

BIOACCUMULATION POTENTIAL: No indication of bioaccumulation.

ECOTOXICOLOGICAL EFFECTS

Test Type: LC0 Fish
Species: Leuciscus idus
Time: 48 h
Value: > 1,000 mg/l

Test Type: EC50 Daphnia
Species: Daphnia magna
Time: 48 h
Value: > 100 mg/l

Test Type: IC50 Algae
Species: Scenedesmus subspicatus
Time: 24 h
Value: > 100 mg/l

13 - Disposal Considerations

SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR

Non-hazardous for road transport.

IMDG

Non-hazardous for sea transport.

IATA

Non-hazardous for air transport.

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

ANNEX I INDEX NUMBER: 603-096-00-8

INDICATION OF DANGER: Xi

Irritant.

R-PHRASES: 36

Irritating to eyes.

S-PHRASES: 24 26

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

COUNTRY SPECIFIC INFORMATION

Germany

VbF: A III

WGK: 1

SWITZERLAND

SWISS POISON CLASS: FREI

16 - Other Information

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our

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