

# OTTO CHEMIE PVT LTD

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ISO 9001: 2015

## MATERIAL SAFETY DATA SHEET

### 1. Identification

1.1 GHS Product identifier  
2-Butoxyethoxy ethanol, 99%+  
Code B 2280

### 2. Hazard identification

2.1 Classification of the substance or mixture  
Eye irritation, Category 2  
2.2 GHS label elements, including precautionary statements  
Pictogram(s)



Signal word

Warning

Hazard statement(s)

H319 Causes serious eye irritation

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337+P313 If eye irritation persists: Get medical advice/attention.

Storage

none

Disposal

none

2.3 Other hazards which do not result in classification

none

### 3. Composition/information on ingredients

#### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Butyldiglycol	Butyldiglycol	112-34-5	none	100%

### 4. First-aid measures

#### 4.1 Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

Fresh air, rest.

In case of skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower.

In case of eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

If swallowed

Rinse mouth.

#### 4.2 Most important symptoms/effects, acute and delayed

Inhalation for brief periods has no significant effect. Contact with liquid causes moderate irritation of eyes and corneal injury.

Prolonged contact with skin causes only minor irritation. (USCG, 1999)

#### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

/SRP:/ Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. /Ethers and related compounds/

### 5. Fire-fighting measures

#### 5.1 Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### 5.2 Specific hazards arising from the chemical

This chemical is combustible.

#### 5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

#### 6. Accidental release measures

##### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

##### 6.2 Environmental precautions

Collect leaking liquid in sealable containers. Wash away remainder with plenty of water.

##### 6.3 Methods and materials for containment and cleaning up

Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation.

#### 7. Handling and storage

##### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

##### 7.2 Conditions for safe storage, including any incompatibilities

Separated from strong oxidants. Ventilation along the floor. Conditions for safe storage, including any incompatibilities: Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

#### 8. Exposure controls/personal protection

##### 8.1 Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

##### 8.2 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

##### 8.3 Individual protection measures, such as personal protective equipment (PPE)

###### Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

###### Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

###### Respiratory protection

Wear dust mask when handling large quantities.

###### Thermal hazards

no data available

#### 9. Physical and chemical properties

Physical state Clear, colorless liquid with a faint butyl odor.

Colour Colorless liquid

Odour Faint butyl odor

Melting point/ freezing point -68\°C (lit.)

Boiling point or initial boiling point and boiling range 230\°C (lit.)

Flammability Combustible.

Lower and upper explosion limit / flammability limit Lower flammable limit: 0.85% by volume; Upper flammable limit:

24.6% by volume

Flash point 78\°C (lit.)

Auto-ignition temperature 227.78\°C (USCG, 1999)

Decomposition temperature no data available

pH Neutral

Kinematic viscosity 0.0649 cP at 20\°C

Solubility In water: soluble

Partition coefficient n-octanol/water (log value) log Kow = 0.56

Vapour pressure 30 mm Hg ( 130 \°C)

Density and/or relative density 0.955

Relative vapour density 5.6 (vs air)

Particle characteristics no data available

## 10. Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Combustible when exposed to heat or flame; can react with oxidizing materials. DIETHYLENE GLYCOL MONOBUTYL ETHER is a ether-alcohol derivative. The ether being relatively unreactive. Flammable and/or toxic gases are generated by the combination of alcohols with alkali metals, nitrides, and strong reducing agents. They react with oxoacids and carboxylic acids to form esters plus water. Oxidizing agents convert alcohols to aldehydes or ketones. Alcohols exhibit both weak acid and weak base behavior. They may initiate the polymerization of isocyanates and epoxides.

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

Glycol ethers, glycols, ketones, and alcohols undergo violent decomposition in contact with 68-72% perchloric acid

### 10.6 Hazardous decomposition products

When heated to decomposition it emits acrid smoke and irritating fumes.

## 11. Toxicological information

### Acute toxicity

Oral: LD50 Mouse oral 2400 mg/kg bw

Inhalation: no data available

Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

## 12. Ecological information

### 12.1 Toxicity

Toxicity to fish: LC50; Species: *Lepomis macrochirus* (Bluegill sunfish); Conditions: static bioassay; Concentration: 2400 mg/L for 24 hr

Toxicity to daphnia and other aquatic invertebrates: LC50; Species: *Daphnia magna* (Water Flea) age < or =24 hr; Conditions: freshwater, static, 20-22°C, pH 7.6-7.7; Concentration: 2850000 ug/L for 24 hr /formulation

Toxicity to algae: no data available

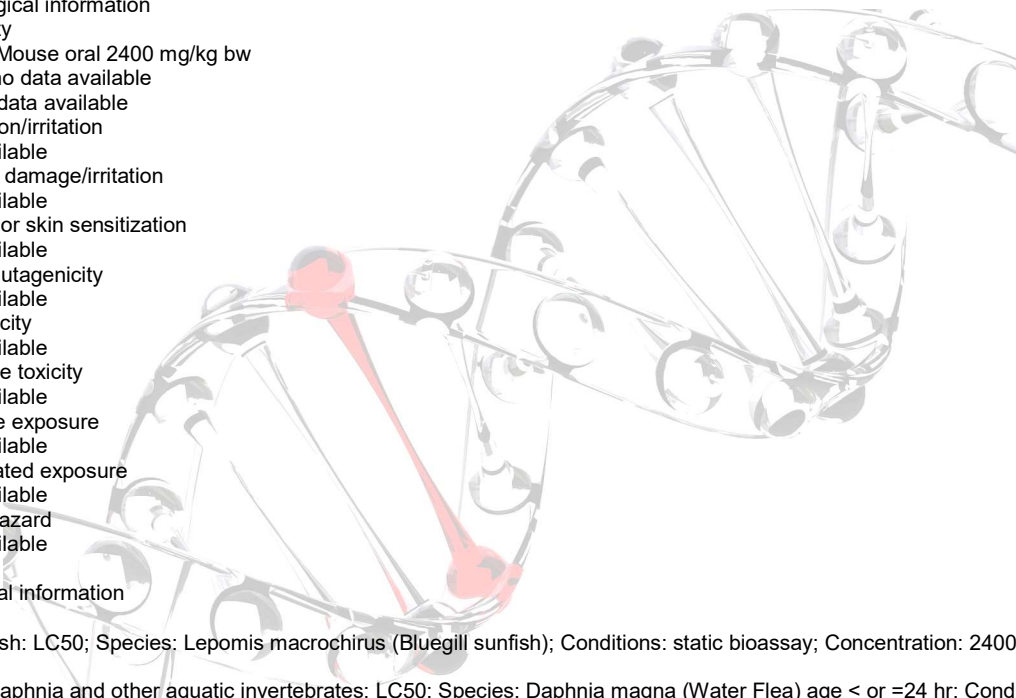
Toxicity to microorganisms: no data available

### 12.2 Persistence and degradability

AEROBIC: Diethylene glycol mono-n-butyl ether had a 5 day BOD and COD of 0.25 and 2.08 g/g, respectively, this calculates to respective theoretical BOD and COD of 11 and 95%(1). Diethylene glycol mono-n-butyl ether showed losses of 2, 13, and 47% of the theoretical BOD when incubated at 20°C for 5, 10, and 20 days, respectively(2). Diethylene glycol mono-n-butyl ether degraded 14, 19, 60, and 100% when incubated for 1, 3, 5, and 6 days, respectively, using a non-adapted activated sludge and a modified Zahn-Wellens test(3). Another modified Zahn-Wellens test using non-adapted activated sludge gave 100% degradation after 9 days(3). Diethylene glycol mono-n-butyl ether showed 58 and >60% removal after 28 days using adapted activated sludge(3). In another screening study, diethylene glycol mono-n-butyl ether showed losses of 27, 60, 78, and 81% when incubated at 20°C for 5, 10, 15, and 20 days, respectively(4). Using the OECD 301D screening test, diethylene glycol mono-n-butyl ether showed losses of 3, 70, and 88% when incubated at 20°C for 5, 15, and 28 days, respectively(4). Using the OECD 301A method diethylene glycol mono-n-butyl ether showed a 94% removal after 14 days(3). Diethylene glycol mono-n-butyl ether had 5, 10, and 15 day BODs of 5.2, 57, and 72% of theoretical BOD(3). Diethylene glycol mono-n-butyl ether, present at 100 mg/L, reached 92% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(5). A study using activated sludge gave a degradation rate for diethylene glycol mono-n-butyl ether of 0.37/hour(6) giving a half-life of about 1.9 hours(SRC).

### 12.3 Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for diethylene glycol mono-n-butyl ether(SRC), using a log Kow of 0.56(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).



#### 12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of diethylene glycol mono-n-butyl ether can be estimated to be 10(SRC). According to a classification scheme(2), this estimated Koc value suggests that diethylene glycol mono-n-butyl ether is expected to have very high mobility in soil.

#### 12.5 Other adverse effects

no data available

#### 13. Disposal considerations

##### 13.1 Disposal methods

###### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

###### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

#### 14. Transport information

##### 14.1 UN Number

ADR/RID: UN2811                      IMDG: UN2811                      IATA: UN2811

##### 14.2 UN Proper Shipping Name

ADR/RID: TOXIC SOLID, ORGANIC, N.O.S.

IMDG: TOXIC SOLID, ORGANIC, N.O.S.

IATA: TOXIC SOLID, ORGANIC, N.O.S.

##### 14.3 Transport hazard class(es)

ADR/RID: 6.1                              IMDG: 6.1                              IATA: 6.1

##### 14.4 Packing group, if applicable

ADR/RID: II                                      IMDG: II                                      IATA: II

##### 14.5 Environmental hazards

ADR/RID: no                                      IMDG: no                                      IATA: no

##### 14.6 Special precautions for user

no data available

##### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

no data available

#### 15. Regulatory information

##### 15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Butyldiglycol	Butyldiglycol	112-34-5	none
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.

#### Section 16: Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.