

# SAFETY DATA SHEETS

## According to the UN GHS revision 9

Version: 1.0  
Creation Date: July 15, 2019  
Revision Date: July 15, 2019

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### 1. SECTION 1: Identification

#### 1.1. GHS Product identifier

**Product name** 2-(2-butoxyethoxy)ethanol

#### 1.2. Other means of identification

**Product number** -

**Other names** 2-(2-butoxyethoxy)ethanol; Ethanol, 2-(2-butoxyethoxy)-; 2-(2-Butoxyethoxy)ethanol

#### 1.3. Recommended use of the chemical and restrictions on use

**Identified uses** Industrial and scientific research use.

**Uses advised against** no data available

#### 1.4. Supplier's details

**Company** Shandong Sincere Chemical Co., Ltd.

**Address** No.21 Industrial North Road, Licheng District, Jinan City, Shandong Province, China.

**Telephone** (+86) 188-6575-9396.

#### 1.5. Emergency phone number

**Emergency phone number** (+86) 188-6575-9396.

**Service hours** Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

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### 2. SECTION 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/hearing 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.  
**Storage** none  
**Disposal** none

**2.3. Other hazards which do not result in classification**  
no data available

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### **3. SECTION 3: Composition/information on ingredients**

#### **3.1. Substances**

<b>Chemical name</b>	<b>Common names and synonyms</b>	<b>CAS number</b>	<b>EC number</b>	<b>Concentration</b>
2-(2-butoxyethoxy)ethanol	2-(2-butoxyethoxy)ethanol	112-34-5	203-961-6	99.0%

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### **4. SECTION 4: First-aid measures**

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

Medical attention is required. Consult a doctor. Show this safety data sheet (SDS) to the doctor in attendance.

**If inhaled**

Fresh air, rest.

**Following skin contact**

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

**Following eye contact**

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

**Following ingestion**

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**

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

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## **5. SECTION 5: Fire-fighting measures**

### **5.1. 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. (NTP, 1992)

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

Use water spray, powder, alcohol-resistant foam, carbon dioxide.

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## **6. SECTION 6: Accidental release measures**

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

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

### **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 breathign vapors, mist, or gas. Ensure adequate ventilation.

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## **7. SECTION 7: Handling and storage**

### **7.1. Precautions for safe handling**

NO open flames. Above 78°C use a closed system and ventilation.

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### **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.

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## **8. SECTION 8: Exposure controls/personal protection**

### **8.1. Control parameters**

#### **Occupational Exposure limit values**

TLV: 10 ppm as TWA.MAK: 67 mg/m<sup>3</sup>, 10 ppm; peak limitation category: I(1); pregnancy risk group: C.EU-OEL: 67.5 mg/m<sup>3</sup>, 10 ppm as TWA; 101.2 mg/m<sup>3</sup>, 15 ppm as STEL

#### **Biological limit values**

no data available

### **8.2. Appropriate engineering controls**

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

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

#### Eye/face protection

Wear safety spectacles.

#### Skin protection

Protective gloves.

#### Respiratory protection

Use ventilation. Use local exhaust.

#### Thermal hazards

no data available

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## 9. SECTION 9: Physical and chemical properties and safety characteristics

<b>Physical state</b>	Liquid.
<b>Colour</b>	Colourless.
<b>Odour</b>	Faint butyl odor
<b>Melting point/freezing point</b>	< -70 °C. Atm. press.:1 atm.
<b>Boiling point or initial boiling point and boiling range</b>	231 °C. Atm. press.:1 atm.
<b>Flammability</b>	Combustible.
<b>Lower and upper explosion limit/flammability limit</b>	Lower flammable limit: 0.85% by volume; Upper flammable limit: 24.6% by volume
<b>Flash point</b>	93 °C. Atm. press.:1 atm.
<b>Auto-ignition temperature</b>	210 °C. Atm. press.:1 013.25 hPa.
<b>Decomposition temperature</b>	no data available
<b>pH</b>	Neutral
<b>Kinematic viscosity</b>	dynamic viscosity (in mPa s) = 6.49. Temperature:20°C.
<b>Solubility</b>	greater than or equal to 100 mg/mL at 68° F (NTP, 1992)
<b>Partition coefficient n-octanol/water</b>	log Pow = 1. Temperature:20 °C.
<b>Vapour pressure</b>	0.022 mm Hg. Temperature:25 °C.
<b>Density and/or relative density</b>	Ca. 955.3 kg/m <sup>3</sup> . Temperature:20 °C.
<b>Relative vapour density</b>	5.6 (vs air)
<b>Particle characteristics</b>	no data available

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## 10. SECTION 10: Stability and reactivity

### 10.1. Reactivity

The substance can presumably form explosive peroxides. Reacts with strong oxidants.

### 10.2. Chemical stability

no data available

### 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.

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## 11. SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 - mouse (male) - 2 410 mg/kg bw. Remarks: Results for fasted animals.
- Inhalation: inhalation risk test - rat - > 29 ppm.
- Dermal: LD50 - rabbit (male) - 2 764 mg/kg bw.

### 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

The substance is irritating to the eyes.

**STOT-repeated exposure**

The substance defats the skin, which may cause dryness or cracking.

**Aspiration hazard**

A harmful contamination of the air will be reached slowly on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.

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## 12. SECTION 12: Ecological information

### 12.1. Toxicity

- Toxicity to fish: LC50 - *Lepomis macrochirus* - 1 300 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - > 100 mg/L - 48 h.
- Toxicity to algae: NOEC - *Desmodesmus subspicatus* (previous name: *Scenedesmus subspicatus*) -  $\geq$  100 mg/L - 96 h.
- Toxicity to microorganisms: EC10 - activated sludge, industrial - > 1 995 mg/L - 30 min. Remarks:Respiration rate.

### 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 deg 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  $\geq$ 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 deg 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 deg 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

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## 13. SECTION 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.

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## 14. SECTION 14: Transport information

### 14.1. UN Number

ADR/RID: Not dangerous goods. (For reference only, please check.)	IMDG: Not dangerous goods. (For reference only, please check.)	IATA: Not dangerous goods. (For reference only, please check.)
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### 14.2. UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For reference only, please check.)	IMDG: Not dangerous goods. (For reference only, please check.)	IATA: Not dangerous goods. (For reference only, please check.)
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### 14.3. Transport hazard class(es)

ADR/RID: Not dangerous goods. (For reference only, please check.)	IMDG: Not dangerous goods. (For reference only, please check.)	IATA: Not dangerous goods. (For reference only, please check.)
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### 14.4. Packing group, if applicable

ADR/RID: Not dangerous goods. (For reference only, please check.)	IMDG: Not dangerous goods. (For reference only, please check.)	IATA: Not dangerous goods. (For reference only, please check.)
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### 14.5. Environmental hazards

ADR/RID: No	IMDG: No	IATA: No
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### 14.6. Special precautions for user

no data available

### 14.7. Transport in bulk according to IMO instruments

no data available

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## 15. SECTION 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	
2-(2-butoxyethoxy)ethanol	2-(2-butoxyethoxy)ethanol	112-34-5	203-961-6	
<b>European Inventory of Existing Commercial Chemical Substances (EINECS)</b>				Listed.
<b>EC Inventory</b>				Listed.
<b>United States Toxic Substances Control Act (TSCA) Inventory</b>				Listed.
<b>China Catalog of Hazardous chemicals 2015</b>				Not Listed.
<b>New Zealand Inventory of Chemicals (NZIoC)</b>				Listed.
<b>Philippines Inventory of Chemicals and Chemical Substances (PICCS)</b>				Listed.
<b>Vietnam National Chemical Inventory</b>				Listed.
<b>Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)</b>				Listed.
<b>Korea Existing Chemicals List (KECL)</b>				Listed.

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## 16. SECTION 16: Other information

### Information on revision

**Creation Date** July 15, 2019

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### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

### References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>



- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

**Other Information**

Check for peroxides prior to distillation; eliminate if found.

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*Disclaimer: 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 knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.*