

Chemical Safety Data Sheet MSDS / SDS

2-(2-butoxyethoxy)ethanol SDS

Revision Date:2024-04-25 Revision Number:1

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**Product identifier**

Product name: 2-(2-butoxyethoxy)ethanol

CAS: 112-34-5

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

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SECTION 2: Hazards identification**Classification of the substance or mixture**

Eye irritation, Category 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

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name: 2-(2-butoxyethoxy)ethanol

Common names and synonyms: 2-(2-butoxyethoxy)ethanol

CAS number: 112-34-5
EC number: 203-961-6
Concentration: 100%

SECTION 4: First aid measures

Description of necessary first-aid measures

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.

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)

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

SECTION 5: Firefighting measures

Suitable extinguishing media

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

Specific hazards arising from the chemical

This chemical is combustible. (NTP, 1992)

Special protective actions for fire-fighters

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

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

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

Environmental precautions

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

Methods and materials for containment and cleaning up

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

SECTION 7: Handling and storage

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.

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.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 10 ppm as TWA.MAK: 67 mg/m³, 10 ppm; peak limitation category: I(1); pregnancy risk group: C.EU-OEL: 67.5 mg/m³, 10 ppm as TWA; 101.2 mg/m³, 15 ppm as STEL

Biological limit values

no data available

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.

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

SECTION 9: Physical and chemical properties and safety characteristics

Physical state: Liquid.

Colour: Colourless.

Odour: Faint butyl odor

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|---|--|
| Melting point/freezing point: | < -70 °C. Atm. press.:1 atm. |
| Boiling point or initial boiling point and boiling range: | 231 °C. Atm. press.:1 atm. |
| 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: | 93 °C. Atm. press.:1 atm. |
| Auto-ignition temperature: | 210 °C. Atm. press.:1 013.25 hPa. |
| Decomposition temperature: | no data available |
| pH: | Neutral |
| Kinematic viscosity: | dynamic viscosity (in mPa s) = 6.49. Temperature:20°C. |
| Solubility: | greater than or equal to 100 mg/mL at 68° F (NTP, 1992) |
| Partition coefficient n-octanol/water: | log Pow = 1. Temperature:20 °C. |
| Vapour pressure: | 0.022 mm Hg. Temperature:25 °C. |
| Density and/or relative density: | Ca. 955.3 kg/m ³ . Temperature:20 °C. |
| Relative vapour density: | 5.6 (vs air) |
| Particle characteristics: | no data available |

SECTION 10: Stability and reactivity

Reactivity

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

Chemical stability

no data available

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.

Conditions to avoid

no data available

Incompatible materials

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

Hazardous decomposition products

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

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.

SECTION 12: Ecological information**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.

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 $>$ 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).

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).

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.

Other adverse effects

no data available

SECTION 13: Disposal considerations

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.

SECTION 14: Transport information

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.)

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.)

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.)

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.)

Environmental hazards

ADR/RID: No

IMDG: No
IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

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

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.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

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

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.

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