

EC-SAFETY DATA SHEET

BUTYLGLYKOL

Version: 6.00

Revision Date 2006/06/26



1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

| | |
|-------------------|--|
| Trade name | BUTYLGLYKOL |
| Use | industrial use, raw material for washing and cleaning agents, Solvent, raw material for printing inks and printing ink additives |
| Company | Hitech Chemicals |

2. COMPOSITION/INFORMATION ON INGREDIENTS

2-butoxyethanol; ethylene glycol monobutyl ether butyl cellosolve

CAS-No.: 111-76-2

Index-No.: 603-014-00-0

EC-No.: 203-905-0

Classification:

Xn

R20/21/22;

Xi

R36/38;

For the full text of the R phrases mentioned in this Section, see Section 16.

3. HAZARDS IDENTIFICATION

Identification of the risks

| | |
|----------|---|
| Harmful | Harmful by inhalation, in contact with skin and if swallowed. |
| Irritant | Irritating to eyes and skin. |

4. FIRST AID MEASURES

| | |
|-----------------------|--|
| General advice | Take off all contaminated clothing immediately. If you feel unwell, seek medical advice (show the label where possible). |
| Inhalation | Provide fresh air. Call a physician immediately. |
| Skin contact | Wash off with plenty of water immediately, seek medical advice if necessary. Take off all contaminated clothing immediately. |
| Eye contact | Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. |
| Ingestion | Rinse mouth. Call a physician immediately. |

5. FIRE-FIGHTING MEASURES

| | |
|-------------------------------------|---|
| Suitable extinguishing media | Water spray, Dry powder, Foam, Carbon dioxide (CO2) |
| Further information | Standard procedure for chemical fires. In the event of fire, cool tanks with water spray. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|--|
| Personal precautions | Use personal protective equipment. |
| Environmental precautions | Avoid subsoil penetration. Do not flush into surface water or sanitary sewer system. |
| Methods for cleaning up | Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). |

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7. HANDLING AND STORAGE

HANDLING

- Safe handling advice** Wear personal protective equipment. Avoid contact with skin and eyes.
- Advice on protection against fire and explosion** Take precautionary measures against static discharges.

STORAGE

- Storage classification (VCI system/Germany):** 10; Combustible liquids neither in Storage Class 3A nor 3B

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

NATIONAL OCCUPATIONAL EXPOSURE LIMITS

| Components | Typ | Control parameters | Update | Basis |
|------------------------|---------|--------------------|---------|--|
| 2-BUTOXYETHANOL (EGBE) | TWA | 20 ppm | 2003 | ACGIH |
| 2-BUTOXYETHANOL | REL | 24 mg/m3 | 06 1997 | NIOSH Pocket Guide to Chemical Hazards |
| 2-BUTOXYETHANOL | REL | 5 ppm | 06 1997 | NIOSH Pocket Guide to Chemical Hazards |
| 2-BUTOXYETHANOL | PEL | 240 mg/m3 | 06 1993 | NIOSH Pocket Guide to Chemical Hazards |
| 2-BUTOXYETHANOL | PEL | 50 ppm | 06 1993 | OSHA Table Z-1 |
| 2-BUTOXYETHANOL | TWA | 120 mg/m3 | 1989 | OSHA Table Z-1 |
| 2-BUTOXYETHANOL | TWA | 25 ppm | 1989 | OSHA Table Z-1-A |
| 2-BUTOXYETHANOL | TWA PEL | 120 mg/m3 | 07 2001 | OSHA Table Z-1-A |
| 2-BUTOXYETHANOL | TWA PEL | 25 ppm | 07 2001 | US - California OELs US - California OELs |
| 2-BUTOXY-ETHANOL | AGW | 98 mg/m3 | 01 2006 | Germany TRGS 900 |
| 2-BUTOXY-ETHANOL | AGW | 20 ppm | 01 2006 | Germany TRGS 900 |

EUROPEAN OCCUPATIONAL EXPOSURE LIMITS

| Components | Typ | Control parameters | Update | Basis |
|-----------------|------|--------------------|---------|--------------------------|
| 2-BUTOXYETHANOL | TWA | 98 mg/m3 | 05 2003 | EU Exposure Limit Values |
| 2-BUTOXYETHANOL | TWA | 20 ppm | 05 2003 | EU Exposure Limit Values |
| 2-BUTOXYETHANOL | STEL | 246 mg/m3 | 05 2003 | EU Exposure Limit Values |
| 2-BUTOXYETHANOL | STEL | 50 ppm | 05 2003 | EU Exposure Limit Values |

PERSONAL PROTECTIVE EQUIPMENT

- Respiratory protection** In inadequately ventilated areas, where workplace limits are exceeded, where unpleasant odours exist or where aerosols are in use, or smoke and mist occur, use self-contained breathing apparatus or breathing apparatus with a type A filter or appropriate combined filter (e.g. where aerosols are in use, or smoke and mist occur, A-P2 or ABEK-P2), in compliance with EN 141.
- Hand protection** The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other., Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time., Be aware that in daily use the durability of a chemical resistant protective glove can be notably shorter than the break through time measured according to EN 374, due to the numerous

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outside influences (e.g. temperature).

gloves suitable for permanent contact:

Material: Fluorkautschuk
Break through time: \geq 480 min
Material thickness: 0.4 mm

Material: butyl-rubber
Break through time: \geq 480 min
Material thickness: 0.5 mm

unsuitable gloves

Material: Natural rubber/natural latex, Polychloroprene, Nitrile rubber/nitrile latex, Polyvinylchloride

Eye protection

Tightly fitting safety goggles

Protective measures

Avoid contact with eyes. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Form | liquid |
| Colour | colourless |
| Odour | mild |
| pH | 20 °C; neutral |
| Melting point/range | < -60 °C |
| Boiling point/range | 168 - 172 °C; 1,013 hPa |
| Flash point | ca. 63 °C; DIN 51755 |
| Ignition temperature | 240 °C; DIN 51794 |
| Lower explosion limit | 1.1 %(V) |
| Upper explosion limit | 10.6 %(V) |
| Vapour pressure | 1 hPa; 20 °C |
| Density | 0.899 - 0.901 g/cm ³ ; 20 °C |
| Water solubility | 20 °C; completely miscible |
| Partition coefficient (n-octanol/water) | log Pow: 0.83 |
| Viscosity, dynamic | 3.26 mPas; 20 °C |

10. STABILITY AND REACTIVITY

| | |
|----------------------------------|--------------------------------------|
| Hazardous decomposition products | No decomposition if stored normally. |
| Further information | Formation of peroxides may occur |

11. TOXICOLOGICAL INFORMATION

| | |
|---------------------------|---|
| Acute oral toxicity | 2-butoxyethanol; ethylene glycol monobutyl ether butyl cellosolve: LD50 rat: 200 - 2,000 mg/kg; (literature value) |
| Acute inhalation toxicity | 2-butoxyethanol; ethylene glycol monobutyl ether butyl cellosolve: LC50 rat: 2 - 20 mg/l; ; 4 h(literature value) |
| Acute dermal toxicity | 2-butoxyethanol; ethylene glycol monobutyl ether butyl cellosolve: LD50 rat: 400 - 2,000 mg/kg; (literature value) |
| Skin irritation | rabbit: slightly irritating; Draize Test |
| Eye irritation | rabbit: slightly irritating; Draize Test |

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| | |
|------------------------------|--|
| Sensitization | 2-butoxyethanol; ethylene glycol monobutyl ether butyl cellosolve: Maximisation Test (GPMT) guinea pig: not sensitizing; (literature value) |
| Genotoxicity in vitro | 2-butoxyethanol; ethylene glycol monobutyl ether butyl cellosolve: Ames test: not mutagenic; (literature value) |

12. ECOLOGICAL INFORMATION

| | |
|-------------------------|---|
| Biodegradability | 2-butoxyethanol; ethylene glycol monobutyl ether butyl cellosolve: Readily biodegradable.; > 70 %; 28 d; OECD Test Guideline 301 E; (literature value) |
|-------------------------|---|

ECOTOXICITY EFFECTS

| | |
|----------------------------|---|
| Toxicity to fish | 2-butoxyethanol; ethylene glycol monobutyl ether butyl cellosolve: LC50 Lepomis macrochirus: > 100 mg/l; 96 h; (literature value) |
| Toxicity to daphnia | 2-butoxyethanol; ethylene glycol monobutyl ether butyl cellosolve: EC50 Daphnia magna: > 100 mg/l; 24 h; (literature value) |
| Toxicity to algae | 2-butoxyethanol; ethylene glycol monobutyl ether butyl cellosolve: EC50 Scenedesmus subspicatus: > 100 mg/l; 7 d; (literature value) |

13. DISPOSAL CONSIDERATIONS

| | |
|--|---|
| Product | Can be incinerated, when in compliance with local regulations. |
| waste code of the European Union: EWC | A waste code in accordance with the European Waste Catalogue (EWC) may not be assigned to this product since it admits of a classification only when the consumer uses it for some purpose. The waste code must be determined in agreement with the regional waste disposal authority or company. |

14. TRANSPORT INFORMATION

| | |
|----------------------------|--|
| ADR | |
| RID | |
| ADNR | |
| IMDG | |
| ICAO/IATA | |
| Further information | Dangerous goods class 9, Identification-No. 9003 ADNR, only when transported by inland waterways tanker. |

15. REGULATORY INFORMATION

LABELLING

| | |
|--------------------------|---|
| Regulatory base | 67/548/EEC |
| Regulatory list | 67/548/EEC, ANNEX 1 |
| Symbol(s) | Xn: Harmful |
| R-phrase(s) | R20/21/22: Harmful by inhalation, in contact with skin and if swallowed. R36/38: Irritating to eyes and skin. |
| S-phrase(s) | S36/37: Wear suitable protective clothing and gloves. S46: If swallowed, seek medical advice immediately and show this container or label. |
| Additional advice | EC Label |

NATIONAL/OTHER REGULATIONS

| | |
|----------------------------------|---|
| Occupational restrictions | Employment restrictions for children and young workers in accordance with Directive 94/33/EC and the respective national provisions are to be observed. |
|----------------------------------|---|

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Employment restrictions for pregnant workers, workers who have recently given birth and nursing mothers in accordance with Directive 92/85/EEC and the respective national provisions are to be observed.

Directive 96/82/EC on the control of major-accident hazards involving dangerous substances

list entry in the directive: Directive 96/82/EC does not apply

Directive 1999/13/EC (VOC)

The question whether this product or components thereof has/have to be considered as volatile organic compound/compounds (VOC) as defined by Directive 1999/13/EU can only be answered when detailed knowledge on the use as solvent in connection with certain activities in certain facilities is available.

16. OTHER INFORMATION

Text of R phrases mentioned in Section 2

R20/21/22

Harmful by inhalation, in contact with skin and if swallowed.

R36/38

Irritating to eyes and skin.

|| Indicates updated section.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

This safety datasheet only contains information relating to safety and does not replace any product information or product specification.