

**OXITOL BE SPECIFICATION
SHEET AND MATERIAL SAFETY
DATA SHEET**

DESCRIPTION

Ethylene Glycol Mono Butyl Ether

OTHER PHYSICAL PROPERTIES

PROPERTIES	UNITS	TYPICAL VALUES	TEST METHOD
Density @ 20°C	Kg/l	0,900	ASTM D1298
Flash point (Closed cup) at 101,3 kPa	°C	67	IP 170
Water content	Mass %	0,1	ASTM D1364
Distillation Range	°C		ASTM D1078
Initial Boiling Point		169	
Final Drying Point		169	
Dry Point		173	
Acidity as CH ₃ COOH	Mg/kg	< 10	ASTM D1613
Colour	Saybolt	+ 30	ASTM D156
Residue on evaporation	Mg/100ml	1	ASTM D1353
Evaporation Rate, relative	n-BuAc = 1	1	ASTM D3539

Hazchem number: 2SE

UN number: 1274

Uses:

A slow evaporating active solvent used in lacquer thinners.

MATERIAL SAFETY DATA SHEET

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

SUPPLIER Sasol Solvents

SYNONYM Butol Oxitol

TRADE NAME Oxitol BE (Ethylene glycol monobutyl ether)

MATERIAL USES A slow evaporating active solvent used in lacquer thinners

MANUFACTURER Sasol Solvents

SECTION 2. COMPOSITION AND INFORMATION ON INGREDIENTS

Name	CAS #	% by weight	TLV / PEL	LC50 / LD50
HAZARDOUS COMPONENTS: Ethylene glycol monobutyl ether	111-76-2	100	TWA: 25 (ppm) from ACGIH [1996] INHALATION TWA: 50 (ppm) from OSHA INHALATION	ORAL (LD50): Acute: 470 mg/kg [Rat]. 530 mg/kg [Rat]. 320 mg/kg [Rabbit]. DERMAL (LD50): Acute: 220 mg/kg [Rabbit]. 406 mg/kg [Rabbit]. VAPOUR (LC50): Acute: 450 ppm 4 hour(s) [Rat].

SECTION 3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW Combustible liquid and vapour. May cause eye irritation. May cause skin irritation. Harmful if swallowed. Harmful if absorbed through skin. Harmful if inhaled.

POTENTIAL ACUTE HEALTH EFFECTS Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of inhalation. Severe over-exposure can result in death. Can be fatal if inhaled or ingested.

POTENTIAL CHRONIC CARCINOGENIC EFFECTS: Not available

HEALTH EFFECTS	MUTAGENIC EFFECTS: Not available TERATOGENIC EFFECTS: Classified PROVEN for human. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/male, Development toxin [PROVEN]. Classified Reproductive system/toxin/female [POSSIBLE]. The substance is toxic to blood, kidneys, liver. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
TARGET ORGANS	Liver, kidneys, CNS and blood.
ROUTES OF ENTRY	Absorbed through skin. Eye contact. Inhalation. Ingestion.

SECTION 3. HAZARDS IDENTIFICATION CONTINUED

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE	Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
SIGNS AND SYMPTOMS OF OVEREXPOSURE	INHALATION: Central nervous system depressant. High vapour concentrations may cause headaches, nausea, dizziness, vomiting, drowsiness, incoordination, confusion, loss of consciousness and death. SKIN CONTACT: Mild skin irritant, BUT is readily absorbed through the skin and may cause CNS effects as described in "inhalation". EYE CONTACT: Moderate to severe eye irritant. INGESTION: May result in CNS depression, coma, respiratory failure, metabolic acidosis, hemoglobinuria, hematuria.

SECTION 4. FIRST AID MEASURES

EYE CONTACT	Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Seek medical attention.
SKIN CONTACT	After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.
HAZARDOUS SKIN CONTACT	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.
INHALATION	Allow the victim to rest in a well-ventilated area. Seek immediate medical attention.

HAZARDOUS INHALATION Take proper precautions to ensure your own safety before attempting rescue (wear appropriate protective equipment, use the buddy system). Evacuate victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

INGESTION DO NOT induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

HAZARDOUS INGESTION DO NOT induce vomiting. NEVER give anything by mouth if victim is rapidly losing consciousness, is unconscious or is convulsing. Have conscious person drink several glasses of water or milk. If breathing has stopped perform artificial respiration, or CPR if heart has stopped, immediately. Avoid mouth-to-mouth contact by using guards or shields. **SEEK IMMEDIATE MEDICAL ATTENTION.**

SECTION 5. FIRE AND EXPLOSION DATA

FLAMMABILITY OF THE PRODUCT	Combustible
AUTO-IGNITION TEMPERATURE	238°C (460.4°F)
FLASH POINTS	CLOSED CUP: 62°C (143.6°F). OPEN CUP: 66°C (150.8°F). (Cleveland)
FLAMMABLE LIMITS	LOWER: 1.1%; UPPER: 12.7%
PRODUCTS OF COMBUSTION	These products are carbon oxides (CO, CO ₂)
FIRE HAZARDS IN PRESENCE OF VARIOUS SUBSTANCES	Flammable in presence of open flames and sparks, of heat, of alkalis.
EXPLOSION HAZARDS IN PRESENCE OF VARIOUS SUBSTANCES	Risks of explosion of the product in the presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Highly explosive in presence of oxidizing materials.
FIRE FIGHTING MEDIA AND INSTRUCTIONS	SMALL FIRE: Use DRY chemicals, CO ₂ , water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.
SPECIAL REMARKS ON FIRE HAZARDS	When heated to decomposition, it emits acrid smoke and irritating fumes.
SPECIAL REMARKS ON EXPLOSION HAZARDS	May form explosive peroxides when exposed to light.

SECTION 6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL	Dilute with water and mop up, or absorb with an inert DRY material and place in an appropriate waste disposal container.
LARGE SPILL	Combustible material. Poisonous liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. DO NOT get water inside container. DO NOT touch spilled material. Use water spray to reduce vapours. Prevent entry into sewers, basements, or confined areas; dike if needed. Eliminate all sources of ignition. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

SECTION 7. HANDLING AND STORAGE

HANDLING	AVOID handling, always wash hands thoroughly with soap and water. Avoid breathing vapours or spray mists. Avoid contact with skin and eyes. DO NOT INGEST. Keep container tightly closed in a cool, well-ventilated place. Store and use away from heat, sparks, open flame, or any other ignition source. Wear suitable protective clothing.
STORAGE	Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Highly toxic or infectious materials should be stored in a separate locked safety storage cabinet or room.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapour below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the workstation location.
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SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION CONTINUED

PERSONAL PROTECTION	Splash goggles. Lab coat. Vapour and dust respirator. Be sure to use an OSHA/NIOSH approved respirator or equivalent. Gloves. Wear appropriate respirator when ventilation is inadequate.
PERSONAL PROTECTION IN CASE OF	Splash goggles. Full suit. Vapour and dust respirator. Boots.

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A LARGE SPILL

Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

CHEMICAL NAME OR PRODUCT NAME	CAS #	EXPOSURE LIMITS
HAZARDOUS COMPONENTS:		
2-Butoxyethanol	111-76-2	TWA: 25 (ppm) from ACGIH [1996] INHALATION TWA: 50 (ppm) from OSHA INHALATION

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE AND APPEARANCE	Liquid. (Liquid)
MOLECULAR WEIGHT	118.17g/mole
PH (1% SOLN/WATER)	7 [Neutral.]
BOILING / CONDENSATION POINT	170.8°C (339.4°F)
MELTING / SUBLIMATION POINT	-70.4°C (-94.7°F)
CRITICAL TEMPERATURE	368°C (694.4°F)
SPECIFIC GRAVITY	0.903 (Water = 1)
VAPOUR PRESSURE	0.76 mm of Hg (@ 20°C)
VAPOUR DENSITY	4.1 (Air = 1)
VOLATILITY	Not available
ODOR THRESHOLD	0.1 ppm
EVAPORATION RATE	0.1 [Butyl acetate].
VISCOSITY	6.4 cP
WATER/OIL DIST. COEFF.	The product is more soluble in oil; log (oil/water) = 0.8
IONICITY (IN WATER)	Not available
DISPERSION PROPERTIES	See solubility in water, methanol, diethyl ether.
SOLUBILITY	Easily soluble in cold water, hot water, methanol. Partially soluble in diethyl ether. Very slightly soluble in n-octanol.
PHYSICAL CHEMICAL COMMENTS	Not available.
ODOUR	Ethereal, pleasant, sweet. (Slight).
TASTE	Not available.
COLOUR	Colourless liquid with a mild odour.

SECTION 10. STABILITY AND REACTIVITY DATA

CHEMICAL STABILITY	The product is stable.
CONDITIONS OF INSTABILITY	No additional remark.
INCOMPATIBILITY WITH VARIOUS	Reactive with oxidizing agents, alkalis.

Director: B.J. Rodd

SUBSTANCES

HAZARDOUS DECOMPOSITION Not available.

PRODUCTS

HAZARDOUS POLYMERIZATION Not available.

SECTION 11. TOXICOLOGICAL INFORMATION

TOXICITY TO ANIMALS

WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE..

Acute oral toxicity (LD50): 320 mg/kg [Rabbit].

Acute dermal toxicity (LD50): 220 mg/kg [Rabbit].

Acute toxicity of the vapour (LC50): 450 ppm 4 hour(s) [Rat].

CHRONIC EFFECTS ON HUMANS

TERATOGENIC EFFECTS: Classified PROVEN for human.

DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxic/male, Development toxin [PROVEN].

Classified Reproductive system/toxin/female. [POSSIBLE].

The substance is toxic to blood, kidneys, liver.

OTHER TOXIC EFFECTS ON HUMANS

Very hazardous in case of ingestion.

Hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of inhalation.

SPECIAL REMARKS ON TOXICITY TO ANIMALS

No additional remark.

SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS

No additional remark.

SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS

Exposure can cause nausea, headache and vomiting.

SECTION 12. ECOLOGICAL INFORMATION

ECOTOXICITY

Exotoxicity in water (LC50): 1250 ppm 96 hour(s) [Menidia beryllina].

BOD5 AND COD

Not available.

PRODUCTS OF BIODEGRADATION

Possibly hazardous short-term degradation products are not likely. However, long-term degradation products may arise.

TOXICITY OF THE PRODUCTS OF BIODEGRADATION

The products of degradation are as toxic as the original product.

SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION The theoretical BOD values for EGMBE for 5, 10 and 20 days were 5,57 and 72% respectively. EGMBE has a low bioconcentration potential in aquatic organisms.

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE INFORMATION Dispose of waste materials in an approved waste treatment disposal facility in accordance with applicable federal, provincial and local government regulations.

WASTE STREAM Not available.

SECTION 14. TRANSPORT INFORMATION

DOT CLASSIFICATION DOT CLASS 6.1: Poisonous material.
PROPER SHIPPING NAME Poisonous material, Ethylene glycol monobutyl ether.
DOT IDENTIFICATION NUMBER UN2369
PACKING GROUP III
MARITIEM TRANSPORTATION Poisonous material, Ethylene glycol monobutyl ether.
HAZARDOUS SUBSTANCES Not available.
REPORTABLE QUANTITY
SPECIAL PROVISIONS FOR TRANSPORT No additional remark.
TDG CLASSIFICATION TDG CLASS 6.1: Poisonous material.
ADR CLASSIFICATION ADR CLASS: Flammable liquid A. Flammable liquid with a flash point lower than 21°C (70°F).
ADR CLASS 6.1: Highly toxic substance with a flash point below 21°C (70°F) and a boiling point below 200°C (392°F).
IMDG CLASSIFICATION IMDG CLASS 6.1: Poisonous material.
IATA CLASSIFICATION IATA CLASS 6.1: Poisonous material.

SECTION 15. REGULATORY INFORMATION

FEDERAL AND STATE REGULATIONS California prop. 65: This product contains the following ingredients for which the State of California has found to cause reproductive harm (female) which would require a warning under the statute:

Ethylene glycol monobutyl ether

California prop. 65: This product contains the following ingredients for which the State of California has found to cause reproductive harm (male) which would require a warning under the statute:

Ethylene glycol monobutyl ether

Pennsylvania RTK:

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Ethylene glycol monobutyl ether

Florida:

Ethylene glycol monobutyl ether

Massachusetts RTK:

Ethylene glycol monobutyl ether

TSCA inventory:

Ethylene glycol monobutyl ether

OTHER CLASSIFICATION

WHMIS (Canada)

WHMIS CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).

WHMIS CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).

WHMIS CLASS D-2A: Material causing other toxic effects (VERY TOXIC)

Canadian Regulatory Lists
DSCLE (EEC)

CEPA DSL:
Ethylene glycol monobutyl ether
R37 – Irritating to respiratory system.
R20/21/22 – Harmful by inhalation, in contact with skin and if swallowed.

International Regulatory Lists

No products were found.

SECTION 16. OTHER INFORMATION

HMIS (U.S.A.)

Health Hazard	2	NATIONAL FIRE PROTECTION
Fire Hazard	2	ASSOCIATION (U.S.A.)
Reactivity	0	
Personal Protection	j	

REFERENCES

- Hawley, G.G., The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987.
- Liste des produits purs teratogenes, mutagenes, cancerogenes. Repertoire toxicologique de la Commission de la Sante et de la Securite du Travail due Quebec.
- SAX, N.I. Dangerous Properties of Industrial Materials, Toronto, Van Nostrand Reinold, 6e ed. 1984.
- The Sigma-Aldrich Library of Chemical Safety Data, Edition II.

OTHER SPECIAL CONSIDERATIONS

No additional remark.

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