

BUTYL GLYCOL ETHER (2-BUTOXYETHANOL, BUTYL CELLOSOLVE)

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SECTION 1: IDENTIFICATION

1.1 GHS Product identifier:

BUTYL GLYCOL ETHER (2-BUTOXYETHANOL, BUTYL CELLOSOLVE)
Ethylene glycol monobutyl ether; EGBE; 2-Butoxyethan-1-ol
CAS: 111-76-2

Other means of identification:

Not relevant

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Solvent for paints, coatings, lacquers and inks; cleaning and degreasing formulations; chemical intermediate. For industrial user only.
Uses advised against: All uses not specified in this section or in section 7.3. Not for use in consumer products without appropriate reformulation and risk assessment.

1.3 Supplier's details:

SURAJ CHEMICALS
No 92, Govindappa Naicken Street, Shiva Complex, Chennai – 600001, Tamil Nadu, India
Tel: +91 - 7092722822, +91 - 9840284032 / +91 - 44 - 25393652, 42130281
Email: sales@surajchemicals.com | Website: www.surajchemicals.com
GST No: 33ACEPV8190L1ZZ

1.4 Emergency phone number:

Emergency Contact No: +91 - 7092722822, +91 - 9840284032

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

GHS:
Classification of this product has been carried out in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Acute Tox. 4	Acute oral toxicity, Category 4, H302
Acute Tox. 4	Acute dermal toxicity, Category 4, H312
Acute Tox. 4	Acute inhalation toxicity, Category 4, H332
Eye Dam. 1	Serious eye damage, Category 1, H318
Skin Irrit. 2	Skin irritation, Category 2, H315

2.2 GHS label elements, including precautionary statements:

GHS: Danger

Hazard statements:

Acute Tox. 4: H302 – Harmful if swallowed.
Acute Tox. 4: H312 – Harmful in contact with skin.
Acute Tox. 4: H332 – Harmful if inhaled.
Eye Dam. 1: H318 – Causes serious eye damage.
Skin Irrit. 2: H315 – Causes skin irritation.

Precautionary statements:

P261: Avoid breathing mist/vapours/spray.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312: IF SWALLOWED: Call a poison centre/doctor if you feel unwell.
P302+P352: IF ON SKIN: Wash with plenty of water.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a poison centre/doctor.
P312: Call a poison centre/doctor if you feel unwell.
P332+P313: If skin irritation occurs: Get medical advice/attention.
P501: Dispose of contents/container in accordance with local/national regulations.

2.3 Other hazards which do not result in classification:

Not a PBT or vPvB substance based on available data.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances:

Chemical description: 2-Butoxyethanol (ethylene glycol monobutyl ether)
In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 111-76-2 EINECS: 203-905-0	2-Butoxyethanol — Acute Tox. 4: H302, H312, H332; Eye Dam. 1: H318; Skin Irrit. 2: H315 – Danger	≥99% (typical commercial grade)

To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

3.2 Mixtures:

Non-applicable

SECTION 4: FIRST AID MEASURES

4.1 Description of necessary first-aid measures:

Request medical assistance immediately, showing the SDS of this product.

- By inhalation:**
- Remove the person affected from the area of exposure, provide fresh air and keep at rest. Seek medical attention if breathing difficulty develops or symptoms persist.
- By skin contact:**
- Remove contaminated clothing and footwear immediately. Wash affected skin with plenty of water and soap. Seek medical advice if irritation develops or persists.
- By eye contact:**
- Rinse immediately and thoroughly with plenty of water for at least 15–20 minutes, holding eyelids apart. Remove contact lenses, if present and easy to do. Seek immediate medical attention – this product causes serious eye damage.
- By ingestion:**
- Do not induce vomiting. Rinse mouth with water. Seek medical attention immediately; call a poison centre/doctor.
- 4.2 Most important symptoms/effects, acute and delayed:**
- May cause serious eye damage, skin irritation and systemic effects (haemolysis, headache, nausea) if absorbed in significant quantity via skin, inhalation or ingestion. See section 11.
- 4.3 Indication of immediate medical attention and special treatment needed, if necessary:**
- Treat symptomatically. Monitor for haemolysis and metabolic acidosis in cases of significant systemic exposure; specialist medical advice should be sought.

SECTION 5: FIRE-FIGHTING MEASURES

- 5.1 Suitable extinguishing media:**
- Suitable:** Water spray/fog, foam (alcohol-resistant), dry chemical powder, carbon dioxide (CO²).
- Unsuitable:** High-pressure water jet (may spread fire).
- 5.2 Specific hazards arising from the chemical:**
- Combustible liquid (flash point ~60°C, closed cup). Vapours may form flammable/explosive mixtures with air at elevated temperatures above the flash point. On combustion may release carbon monoxide and carbon dioxide.
- 5.3 Special protective actions for fire-fighters:**
- Evacuate non-essential personnel. Wear self-contained breathing apparatus and full protective clothing in case of fire. Cool fire-exposed containers with water spray.
- Additional provisions:**
- Contain fire-fighting water run-off to prevent discharge to drains/watercourses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures:**
- For non-emergency personnel:**
- Avoid contact with skin and eyes; avoid breathing vapours/mist. Use PPE described in section 8. Ventilate the area, especially in confined spaces. Remove ignition sources.
- For emergency responders:**
- Wear appropriate chemical-resistant PPE as per section 8, including eye/face protection. Keep unprotected persons away.
- 6.2 Environmental precautions:**
- Prevent product from entering drains, soil or watercourses. Contain spillage. Notify the relevant authority in case of significant exposure to the environment.
- 6.3 Methods and materials for containment and cleaning up:**
- Contain spillage with absorbent inert material (sand, vermiculite, absorbent granules/pads). Collect into suitable labelled containers for recovery or disposal. Ventilate the area after clean-up.
- 6.4 Reference to other sections:**
- See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

- 7.1 Precautions for safe handling:**
- A. General precautions for safe use:**
- Avoid contact with skin and eyes. Avoid breathing vapour/mist. Use only in well-ventilated areas. Wear appropriate PPE as per section 8. Keep away from heat and ignition sources.
- B. Technical recommendations for the prevention of fires and explosions:**
- Keep away from open flames, hot surfaces and other ignition sources. Use properly earthed/bonded equipment for bulk transfer to avoid static discharge.
- C. Technical recommendations on general occupational hygiene:**
- Do not eat, drink or smoke while handling. Wash hands and exposed skin before breaks and after work. Remove and launder contaminated clothing before re-use.
- D. Technical recommendations to prevent environmental risks:**
- Avoid release to the environment. Provide secondary containment for bulk storage.
- 7.2 Conditions for safe storage, including any incompatibilities:**
- A. Specific storage requirements:**
- | | |
|---------------|-------------------------------|
| Minimum Temp. | Ambient |
| Maximum Temp. | 30°C |
| Maximum time | 24 Months (unopened, typical) |
- B. General conditions for storage:**
- Store in tightly closed containers in a cool, dry, well-ventilated place away from heat, ignition sources, strong oxidisers and strong acids. For additional information see subsection 10.5.
- 7.3 Specific end use(s):**
- Used as an industrial solvent in paints, coatings and cleaning formulations. Except for the instructions already specified, no special recommendation is required.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

- 8.1 Control parameters:**
- Substances whose occupational exposure limits have to be assessed in the workplace, per the Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987):
- | Identification | Occupational Exposure Limit Type | Value |
|----------------------------------|--|--|
| 2-Butoxyethanol
CAS: 111-76-2 | Time Weighted average concentration (8 hrs), skin notation | 20 ppm / 98 mg/m³ |
| | Short-term exposure limit (15 min) | Typical value – refer to current specification sheet |
- 8.2 Appropriate engineering controls:**
- Use local exhaust ventilation at the point of use to keep airborne concentrations below occupational exposure limits.
- B. Respiratory protection:**
- Where ventilation is inadequate, use an organic vapour cartridge respirator. Use supplied-air respiratory protection for high vapour concentrations or confined-space work.
- C. Specific protection for the hands:**
- Chemical-resistant gloves (e.g., nitrile, viton); note the substance is readily absorbed through skin – select glove material with proven breakthrough resistance and replace regularly.
- D. Eye and face protection:**
- Chemical splash goggles or full-face shield – mandatory given the Eye Dam. 1 classification.
- E. Bodily protection:**
- Chemical-resistant protective clothing/apron. Safety footwear.

F. Additional emergency measures:
Emergency shower and eyewash stations must be readily available in the work area.

Environmental exposure controls:
Avoid environmental release. See subsection 7.1.D.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance	
Physical state at 20°C	Liquid
Appearance	Clear liquid
Color	Colorless
Odor	Mild, ether/rancid-like
Odour threshold	~0.1–0.5 ppm (typical published range)
Volatility	
Boiling point at atmospheric pressure	171°C
Vapour pressure at 20°C	~0.8 mbar
Evaporation rate at 20°C	Slow (relative to water)
Product Description	
Density / Relative density at 20°C	0.901 g/cm³
Dynamic / Kinematic viscosity	~3.2 mPa·s (20°C, typical)
Concentration	≥99% (typical)
pH	Not relevant (neutral organic liquid)
Vapour density at 20°C	~4.1 (air = 1)
Partition coefficient n-octanol/water 20°C	Log Pow: ~0.81
Solubility in water at 20°C	Miscible (complete)
Decomposition temperature	Typical value – refer to current specification sheet
Melting point/freezing point	-74°C
Flammability	
Flash Point	~60°C (closed cup)
Flammability (solid, gas)	Non-applicable (liquid); combustible liquid
Autoignition temperature	~245°C
Lower / Upper flammability limit	1.1–12.7% (v/v)
Particle Characteristics	
Median equivalent diameter	Non-applicable (liquid)

9.2 Other information:

Explosive properties	Not explosive
Oxidising properties	Not oxidising
Corrosive to metals	Not corrosive to metals
Heat of combustion	Typical value – refer to current specification sheet
Surface tension at 20°C	Typical value – refer to current specification sheet
Refraction index	~1.419

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:
Stable under normal conditions of use and storage. May react with strong oxidising agents and strong acids. Can form peroxides very slowly on extremely prolonged storage in contact with air and light, although this is not a prominent hazard for this substance (unlike simple ethers such as diethyl ether).

10.2 Chemical stability:
Chemically stable under the indicated conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:
Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Avoid very prolonged exposure	Keep away from heat/ignition sources (flash point ~60°C)	Avoid prolonged direct exposure	Not particularly sensitive (miscible with water)

10.5 Incompatible materials:

Strong Oxidisers	Strong Acids	Strong Alkalís	Heat/Ignition Sources
Avoid contact	Avoid contact	Avoid prolonged contact	Keep away

10.6 Hazardous decomposition products:
Thermal decomposition/combustion may release carbon monoxide and carbon dioxide.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:
In case of exposure that is repetitive, prolonged, or at concentrations higher than the recommended occupational exposure limits, adverse health effects may result depending on the means of exposure:

A. Ingestion (acute effect):
Harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting; significant ingestion may cause haemolysis and central nervous system depression.

B. Inhalation (acute effect):
Harmful if inhaled. Vapours may cause irritation of the respiratory tract, headache, dizziness and nausea at elevated concentrations.

C. Contact with skin and eyes (acute effect):
Harmful in contact with skin; causes skin irritation and is readily absorbed through intact skin. Causes serious eye damage.

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity):
Classification criteria for carcinogenicity, mutagenicity and reproductive toxicity are not met based on available data. IARC: Not classifiable (Group 3 considerations vary by source; not classified as a human carcinogen).

E. Sensitizing effects:
Classification criteria for respiratory or skin sensitisation are not met based on available data.

F. Specific target organ toxicity (STOT) – single exposure:
High exposures have been associated with haemolysis (red blood cell damage) in animal studies; not classified as STOT under GHS at typical commercial classification but caution regarding repeated/high exposure is warranted.

G. Specific target organ toxicity (STOT) – repeated exposure:
Classification criteria are not met based on available data under current GHS commercial classification for this substance.

H. Aspiration hazard:
Classification criteria are not met based on available data.

Product-specific toxicological information:

Identification	Acute Toxicity	Genus
2-Butoxyethanol CAS: 111-76-2	LD50 oral: 470 mg/kg	Rat
	LD50 dermal: 220 mg/kg	Rabbit
	LC50 inhalation: ~450 ppm (4h)	Rat

SECTION 12: ECOLOGICAL INFORMATION

Not expected to be highly toxic to aquatic organisms; readily biodegradable.

12.1 Toxicity:

Acute Toxicity	Species	Genus
LC50: ~1490 mg/L (96h)	Pimephales promelas	Fish
EC50: ~1550 mg/L (48h)	Daphnia magna	Crustacean

12.2 Persistence and degradability:

Readily biodegradable (passes standard OECD ready biodegradability criteria).

12.3 Bioaccumulative potential:

Low bioaccumulation potential (log Pow ~0.81); not expected to bioaccumulate.

12.4 Mobility in soil:

Koc	Henry	Dry Soil	Moist Soil
Low	Low	High mobility	High mobility

12.5 Results of PBT and vPvB assessment:

Does not meet PBT/vPvB criteria.

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Dispose of in accordance with local, state and national regulations via a licensed waste disposal contractor. Do not discharge to drains or water courses. Empty containers may retain product residue and vapour – handle with the same precautions as the full product.

Refer to national and local regulations on hazardous waste management.

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR 2023 / RID 2023):

14.1 UN number	UN2369
14.2 UN proper shipping name	2-BUTOXYETHANOL
14.3 Transport hazard class(es)	6.1
14.4 Packing group	III
14.5 Environmental hazard	No
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by sea (IMDG 41-22):

14.1 UN number	UN2369
14.2 UN proper shipping name	2-BUTOXYETHANOL
14.3 Transport hazard class(es)	6.1
14.4 Packing group	III
14.5 Marine pollutant	No
14.6 Special precautions for user	EmS Codes: F-A, S-A
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by air (IATA/ICAO 2024):

14.1 UN number	UN2369
14.2 UN proper shipping name	2-BUTOXYETHANOL
14.3 Transport hazard class(es)	6.1
14.4 Packing group	III
14.5 Environmental hazard	No
14.6 Special precautions for user	Physico-chemical properties: see section 9

14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant
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SECTION 15: REGULATORY INFORMATION

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

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of local circumstances, in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation:

- Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
- The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)
- The Chemical Accidents (Emergency Planning, Preparedness, and Response) Rules, 1996
- Public Liability Insurance Act, 1991

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3:

- H302: Harmful if swallowed.
- H312: Harmful in contact with skin.
- H332: Harmful if inhaled.
- H318: Causes serious eye damage.
- H315: Causes skin irritation.

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3.

Advice related to training:

Training is recommended for personnel handling this product to ensure correct use of PPE (particularly eye/face protection), safe storage and emergency response procedures.

Principal bibliographical sources:

Published GHS classification references and standard commercial/regulatory SDS databases for 2-Butoxyethanol (Butyl Glycol Ether), CAS 111-76-2.

Abbreviations and acronyms:

ADR: European agreement concerning the international carriage of dangerous goods by road | IMDG: International maritime dangerous goods code | IATA: International Air Transport Association | ICAO: International Civil Aviation Organisation | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50 | Log-POW: Octanol-water partition coefficient | Koc: Partition coefficient of organic carbon | IARC: International Agency for Research on Cancer

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

END OF SAFETY DATA SHEET