

CELLOSOLVE (ETHYL / 2-ETHOXYETHANOL)

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SECTION 1: IDENTIFICATION

1.1 GHS Product identifier:

CELLOSOLVE (ETHYL / 2-ETHOXYETHANOL)  
Synonyms: 2-Ethoxyethanol; Ethylene glycol monoethyl ether; Ethyl cellosolve  
CAS: 110-80-5

Other means of identification:

Not relevant

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Solvent for paints, lacquers, dyes and printing inks, cleaning agent formulations, chemical intermediate. For industrial use only. For industrial user only.  
Uses advised against: All uses not specified in this section or in section 7.3.

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  
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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).

|              |                                             |
|--------------|---------------------------------------------|
| Flam. Liq. 3 | Flammable liquid, Category 3, H226          |
| 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 |
| Repr. 1B     | Reproductive toxicity, Category 1B, H360FD  |

2.2 GHS label elements, including precautionary statements:

**GHS: Danger**  
**Hazard statements:**  
Flam. Liq. 3: H226 – Flammable liquid and vapour.  
Acute Tox. 4: H302 – Harmful if swallowed.  
Acute Tox. 4: H312 – Harmful in contact with skin.  
Acute Tox. 4: H332 – Harmful if inhaled.  
Repr. 1B: H360FD – May damage fertility. May damage the unborn child.

Precautionary statements:

P201: Obtain special instructions before use.  
P202: Do not handle until all safety precautions have been read and understood.  
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P260: Do not breathe vapours.  
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 CENTER/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.  
P308+P313: IF exposed or concerned: Get medical advice/attention.  
P405: Store locked up.  
P501: Dispose of the contents/containers in accordance with regulations on hazardous waste.

2.3 Other hazards which do not result in classification:

No safe exposure threshold established for the reproductive toxicity hazard; minimise exposure via engineering controls. Skin absorption is a significant route of exposure. Does not meet the PBT/vPvB criteria.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances:

**Chemical description:** 2-Ethoxyethanol (Ethyl Cellosolve, technical grade)  
In accordance with Annex 4.3.3 of the GHS, the product contains:

| Identification | Chemical Name / Classification                                                                               | Concentration |
|----------------|--------------------------------------------------------------------------------------------------------------|---------------|
| CAS: 110-80-5  | Cellosolve (2-Ethoxyethanol) — Flam. Liq. 3: H226; Acute Tox. 4: H302, H312, H332; Repr. 1B: H360FD – Danger | ≥ 99%         |

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 immediately, provide fresh air and keep at rest. Seek medical attention.

By skin contact:

Remove contaminated clothing immediately (significant dermal absorption risk), wash skin thoroughly with plenty of water and soap. Seek medical attention.

By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes, holding eyelids open. Remove contact lenses if present and easy to do. Seek medical attention.

By ingestion/aspiration:

Do not induce vomiting. Rinse the mouth with water. Seek medical attention, showing the SDS of the product, particularly for pregnant or breastfeeding workers.

4.2 Most important symptoms/effects, acute and delayed:

Acute and delayed effects are indicated in sections 2 and 11.

4.3 Indication of immediate medical attention and special treatment needed, if necessary:

Inform medical personnel of the reproductive toxicity (Repr. 1B) classification; pregnant/breastfeeding individuals with significant exposure should seek prompt medical advice.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media:

**Suitable:** Foam (alcohol-resistant), dry chemical powder, carbon dioxide, water spray/fog for cooling containers

**Unsuitable:** Do not use a solid water jet as it may scatter and spread the fire

5.2 Specific hazards arising from the chemical:

Flammable liquid and vapour. Vapours may form explosive mixtures with air and travel to an ignition source.

5.3 Special protective actions for fire-fighters:

Evacuate all non-essential personnel. Intervention only by capable personnel who are trained and aware of the hazards of the product. In all cases wear self-contained breathing apparatus. When intervention in close proximity, wear full protective chemical-resistant suit. After intervention, proceed to clean the equipment (take a shower, remove clothing carefully, clean and check).

Additional provisions:

Cool fire-exposed containers with water spray from a safe distance. Approach from upwind. Contain fire-fighting water to prevent environmental release.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Eliminate ignition sources. Ventilate the area. Contain the spill provided there is no additional risk, avoiding skin contact (see section 8) – use full skin protection given the reproductive toxicity classification.

For emergency responders:

Wear protective equipment. Keep unprotected persons away. See section 8.

6.2 Environmental precautions:

Avoid release to drains, watercourses or soil. Contain spillage with inert absorbent material. Notify the relevant authority in case of significant environmental release.

6.3 Methods and materials for containment and cleaning up:

Absorb with inert non-combustible absorbent material (sand, vermiculite) and place in a labelled, closed container for disposal.

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:

Handle in well-ventilated areas with local exhaust ventilation to minimise vapour exposure. Avoid all skin contact – this substance is significantly absorbed through the skin. Pregnant or breastfeeding workers should not handle this product. Keep away from heat and ignition sources.

B. Technical recommendations for the prevention of fires and explosions:

Store and handle away from oxidizing agents and ignition sources; ground and bond containers during transfer.

C. Technical recommendations on general occupational hygiene:

Do not eat or drink during the process; wash hands afterwards with suitable cleaning products.

D. Technical recommendations to prevent environmental risks:

Provide tight electrical equipment well protected against corrosion. Avoid atmospheric emissions. Warn people about the dangers of the product. Follow the protective measures given in the exposure controls/personal protection section. In industrial installations, apply the rules for the prevention of major accidents (consult an expert).

7.2 Conditions for safe storage, including any incompatibilities:

A. Specific storage requirements:

|               |                                                             |
|---------------|-------------------------------------------------------------|
| Minimum Temp. | 5°C                                                         |
| Maximum Temp. | 35°C (cool, well-ventilated, locked/access-controlled area) |
| Maximum time  | 24 Months in original sealed packaging                      |

B. General conditions for storage:

Store in a cool, dry, well-ventilated, access-controlled area, in tightly closed containers, away from heat, ignition sources and oxidizing agents. For additional information see subsection 10.5.

7.3 Specific end use(s):

Except for the instructions already specified, it is not necessary to provide any special recommendation regarding the uses of this product.

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-Ethoxyethanol<br>CAS: 110-80-5 | ACGIH TLV – TWA (8 hrs, skin notation) | 5 ppm |

8.2 Appropriate engineering controls:

It is recommended to use localized extraction in the work area as a collective protection measure to avoid exceeding occupational exposure limits, in addition to individual protective equipment (PPE) as needed. Consult the manufacturer's information leaflet for storage, use, cleaning and maintenance of PPE.

B. Respiratory protection:

Organic vapour cartridge respirator where ventilation is insufficient.

C. Specific protection for the hands:

Chemical-resistant gloves offering full protection against dermal absorption (e.g. Viton®, laminate film gloves) – standard nitrile/latex may not provide adequate protection given the reproductive toxicity hazard.

D. Eye and face protection:

Chemical splash goggles.

**E. Bodily protection:**  
Chemical-resistant, flame-retardant/antistatic clothing covering all exposed skin.

**F. Additional emergency measures:**  
Emergency shower (ANSI Z358-1, ISO 3864-1:2011, ISO 3864-4:2011) and eyewash stations (DIN 12 899, ISO 3864-1:2011, ISO 3864-4:2011) should be available.

**Environmental exposure controls:**  
Avoid environmental spillage of both the product and its container. 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, mobile liquid                  |
| Color                                           | Colorless                             |
| Odor                                            | Mild, pleasant, ether-like            |
| Odour threshold                                 | Available on request                  |
| Volatility                                      |                                       |
| Boiling point at atmospheric pressure           | 135°C                                 |
| Vapour pressure at 20°C                         | ~0.5 kPa (3.8 mmHg)                   |
| Evaporation rate (n-BuAc = 1)                   | ~0.4 (moderate)                       |
| Product Description                             |                                       |
| Density / Relative density at 20°C              | 0.93 g/cm³                            |
| Dynamic / Kinematic viscosity at 20°C           | ~2.1 mPa·s                            |
| Concentration                                   | ≥ 99%                                 |
| pH                                              | Not applicable (neutral, non-aqueous) |
| Vapour density (air = 1)                        | ~3.1                                  |
| Partition coefficient n-octanol/water (log Pow) | -0.32                                 |
| Solubility in water at 20°C                     | Miscible in all proportions           |
| Decomposition temperature                       | Not established                       |
| Melting point/freezing point                    | -70°C                                 |
| Flammability                                    |                                       |
| Flash Point                                     | 44°C (closed cup)                     |
| Flammability (solid, gas)                       | Non-applicable (liquid); flammable    |
| Autoignition temperature                        | 235°C                                 |
| Lower / Upper flammability limit                | 1.7% / 15.6% (vol. in air, approx.)   |
| Particle Characteristics                        |                                       |
| Median equivalent diameter                      | Non-applicable (liquid)               |

9.2 Other information:

|                         |                                                                                               |
|-------------------------|-----------------------------------------------------------------------------------------------|
| Explosive properties    | Not classified as explosive; vapour/air mixtures are flammable within the flammability limits |
| Oxidising properties    | Not an oxidizer                                                                               |
| Corrosive to metals     | Not classified                                                                                |
| Heat of combustion      | Available on request                                                                          |
| Surface tension at 20°C | Available on request                                                                          |
| Refraction index        | ~1.407                                                                                        |

SECTION 10: STABILITY AND REACTIVITY

**10.1 Reactivity:**  
No reactivity hazard under normal conditions of storage, handling and use. Reacts with strong oxidizing agents.

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

**10.3 Possibility of hazardous reactions:**  
Vapours can form explosive mixtures with air. Under recommended conditions no other hazardous reactions are expected.

10.4 Conditions to avoid:

| Shock/Friction | Contact with Air              | Increase in Temperature     | Sunlight       | Humidity                             |
|----------------|-------------------------------|-----------------------------|----------------|--------------------------------------|
| Not applicable | Vapour/air mixtures flammable | Avoid heat/ignition sources | Not applicable | Not applicable (miscible with water) |

10.5 Incompatible materials:

| Strong Oxidizing Agents | Strong Acids  | Ignition Sources                |
|-------------------------|---------------|---------------------------------|
| Avoid contact           | Avoid contact | Avoid – flammable liquid/vapour |

**10.6 Hazardous decomposition products:**  
Carbon monoxide and carbon dioxide on combustion; no hazardous decomposition under normal storage.

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 CNS depression, haemolysis and metabolic effects consistent with glycol ether toxicity.

**B. Inhalation (acute effect):**  
Harmful if inhaled. Vapours may cause irritation of the respiratory tract and CNS effects; significant contributor to overall systemic exposure alongside dermal absorption.

**C. Contact with skin and eyes (acute effect):**  
Harmful in contact with skin (significant dermal absorption route). May cause mild irritation on contact with eyes.

**D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity):**  
May damage fertility and the unborn child (Repr. 1B, H360FD), based on well-documented animal reproductive/developmental toxicity data for glycol ethers of this class. Classification criteria for carcinogenicity and mutagenicity are not met based on available data. IARC: Not classified.

**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:**  
Classification criteria are not met based on available data beyond the acute toxicity noted in section 2.

**G. Specific target organ toxicity (STOT) – repeated exposure:**  
Repeated exposure has been associated with haematological effects (e.g. reduced red/white blood cell counts) in occupational and animal studies of glycol ethers of this class; addressed primarily via the reproductive toxicity 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-Ethoxyethanol (Ethyl Cellosolve, technical grade)<br>CAS: 110-80-5 | LD50 oral: 1200 mg/kg                    | Rat    |
|                                                                      | LD50 dermal: 664 mg/kg                   | Rabbit |
|                                                                      | LC50 inhalation: ~3300 ppm (2h, approx.) | Rat    |

SECTION 12: ECOLOGICAL INFORMATION

Not classified as hazardous to the aquatic environment under standard GHS criteria.

12.1 Toxicity:

| Identification                   | Acute Toxicity         | Species             | Genus      |
|----------------------------------|------------------------|---------------------|------------|
| 2-Ethoxyethanol<br>CAS: 110-80-5 | LC50: >3300 mg/L (96h) | Pimephales promelas | Fish       |
|                                  | EC50: >1000 mg/L (48h) | Daphnia magna       | Crustacean |

**12.2 Persistence and degradability:**  
Readily biodegradable under standard OECD test conditions.

**12.3 Bioaccumulative potential:**  
Low bioaccumulation potential (log Pow -0.32).

12.4 Mobility in soil:

| Koc | Henry | Dry Soil | Moist Soil                  |
|-----|-------|----------|-----------------------------|
| Low | Low   | No       | Miscible, disperses readily |

**12.5 Results of PBT and vPvB assessment:**  
This substance does not meet the PBT/vPvB criteria of Annex XIII.

**12.6 Other adverse effects:**  
Not described

SECTION 13: DISPOSAL CONSIDERATIONS

**13.1 Disposal methods:**  
Preferably recover/recycle where feasible. Otherwise incinerate in a licensed hazardous waste incinerator with afterburner and emission control. For packaging: manage as hazardous waste given the reproductive toxicity classification; do not rinse into drains.  
Refer to national and local regulations on waste management, including the Hazardous and Other Wastes (Management and Transboundary Movement) Rules.

SECTION 14: TRANSPORT INFORMATION

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

|                                                          |                                            |
|----------------------------------------------------------|--------------------------------------------|
| 14.1 UN number                                           | UN1171                                     |
| 14.2 UN proper shipping name                             | ETHYLENE GLYCOL MONOETHYL ETHER            |
| 14.3 Transport hazard class(es)                          | 3                                          |
| 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                                           | UN1171                                                                          |
| 14.2 UN proper shipping name                             | ETHYLENE GLYCOL MONOETHYL ETHER                                                 |
| 14.3 Transport hazard class(es)                          | 3                                                                               |
| 14.4 Packing group                                       | III                                                                             |
| 14.5 Marine pollutant                                    | No                                                                              |
| 14.6 Special precautions for user                        | EmS Codes: F-E, S-D   Limited quantities: 5 L   Segregation group: Not relevant |
| 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                  | UN1171                          |
| 14.2 UN proper shipping name    | ETHYLENE GLYCOL MONOETHYL ETHER |
| 14.3 Transport hazard class(es) | 3                               |
| 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                               |

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:

H226: Flammable liquid and vapour.  
H302: Harmful if swallowed.  
H312: Harmful in contact with skin.  
H332: Harmful if inhaled.  
H360FD: May damage fertility. May damage the unborn child.

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:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

The United Nations Economic Commission for Europe (UNECE); European Chemicals Agency (ECHA) classification and labelling inventory; ACGIH Threshold Limit Values.

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 | COD: Chemical Oxygen Demand | BOD5: 5-day biochemical oxygen demand | BCF: Bioconcentration factor | 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