SECTION-1: Identification of the substance / mixture and the company / undertaking

Catalogue Number	CS-O-55647
Product Name	Ethylene oxide solution (50 mg/mL in methanol)
CAS No.	75-21-8
Category	Building Blocks
Synonyms	Ethylene Oxide; Ethyleneoxy; 1,2-Epoxyethane; 12/88; Ciba-Geigy 9138; Dihydrooxirene; Dimethylene Oxide; ETO; Epoxyethane; Ethene Oxide; Mirror Ox; Oxacyclopropane; Oxane; Oxidoethane; Dihydro-oxirene; Oxyfume; Oxyfume 12; Oxyfume 2002; T-Gas
Brand	Clearsynth Labs Ltd.
Identified uses	Laboratory Chemicals
Uses advised against	Not available
Company	Clearsynth Labs Ltd. Mumbai, India
Emergency Phone #	+91-22-245045900
REACH No.	Not available

SECTION 2: Hazards identification

Disclaimer: This is sample MSDS. Please email **sales@clearsynth.com** for more details.

2.1 Classification of the substance or mixture-Regulation (EC) No 1272/2008:

Skin irritation (Category 2)
Serious eye damage/eye irritation (Category 2)
Acute toxicity (Category 4)

2.2 Label Elements

Signal Word: Warning

Hazard Statement(s)

Code	Statement

H220	Not available
H301	Not available
H314	Not available
H318	Causes serious eye damage.
H331	Not available
H335	Not available
H336	Not available
H340	Not available
H350	Not available
H372	Not available
H230	Not available
H280	Not available
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H360	Not available
H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.
H412	Not available
H370	Not available
H373	Not available
H402	Not available

Precautionary Statement(s)

Code	Statement
P203	Not available
P210	Not available
P222	Not available
P260	Not available
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.

P264	Wash hands thoroughly after handling.
P264+P265	Not available
P270	Not available
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P316	Not available
P301+P330+P331	Not available
P302+P361+P354	Not available
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P354+P338	Not available
P316	Not available
P317	Not available
P318	Not available
P319	Get medical help if you feel unwell.
P321	Specific treatment (see … on this label).
P330	Not available
P363	Not available
P377	Not available
P381	Not available
P403	Not available
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulatio
P301+P317	Not available
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if presen
P332+P317	If skin irritation occurs: Get medical help.
P337	Not available
P337+P317	If eye irritation persists: Get medical help.
P362+P364	Take off contaminated clothing and wash it before reuse.

P410+P403	Not available
P272	Not available
P273	Not available
P333+P317	Not available
P391	Not available
P308+P316	Not available

SECTION 3: Composition / information on ingredients

3.1 Substance

Component : Ethylene oxide solution (50 mg/mL in methanol)
CAS Number : 75-21-8
Molecular Formula : C■H■O
Molecular Weight : 44.5
Parent Chemical : -
Synonyms : Ethylene Oxide; Ethyleneoxy; 1,2-Epoxyethane; 12/88; Ciba-Geigy 9138; Dihydrooxirene; Dimethylene Oxide; ETO; Epoxyethane; Ethene Oxide; Mirror Ox; Oxacyclopropane; Oxane; Oxidoethane; Dihydro-oxirene; Oxyfume; Oxyfume 12; Oxyfume 2002; T-Gas
Concentration : Not available

SECTION 4: First aid measures

SECTION 4: First-aid measures

4.1 Description of first aid measures
General advice:
- Remove from exposure. Keep at rest. Seek medical attention if symptoms occur or persist.
- Show this SDS to the physician in attendance.

Inhalation:
- Move person to fresh air. Keep warm and at rest.
- If breathing is difficult, seek medical attention.

Skin contact:
- Remove contaminated clothing and shoes.
- Wash skin with plenty of water and soap.
- Seek medical attention if irritation develops.

Eye contact:
- Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do.
- Continue rinsing and obtain medical attention.

Ingestion:
- Rinse mouth. Do not induce vomiting.
- Never give anything by mouth to an unconscious person.

- Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed
- Not available.

4.3 Indication of any immediate medical attention and special treatment needed
- Treat symptomatically.
- Not available.

SECTION 5: Firefighting measures

SECTION 5: Fire-fighting measures

5.1 Extinguishing media
Suitable extinguishing media:
- Use extinguishing measures appropriate to surrounding fire.
- Not available.

Unsuitable extinguishing media:
- Not available.

5.2 Special hazards arising from the substance or mixture
- Flammable solvent (methanol) may form flammable vapor-air mixtures.
- Ethylene oxide is a highly flammable/reactive substance; vapors may form explosive mixtures.
- Hazardous combustion products: Not available.

5.3 Advice for firefighters
- Wear self-contained breathing apparatus (SCBA) and full protective gear.
- Cool containers with water spray if exposed to fire.
- Fight fire from a safe distance.

SECTION 6: Accidental release measures

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
- Evacuate unnecessary personnel.
- Eliminate all ignition sources. Provide adequate ventilation.
- Avoid breathing vapors/mist and avoid contact with skin/eyes.
- Wear appropriate personal protective equipment (see Section 8).

6.2 Environmental precautions
- Prevent further leakage or spillage if safe to do so.
- Avoid release to the environment. Prevent entry into drains, waterways, or soil.

6.3 Methods and material for containment and cleaning up
- Contain spill with inert absorbent material.
- Collect into suitable, closed containers for disposal.
- Clean contaminated area with water and detergent where appropriate; avoid generating vapors.

6.4 Reference to other sections
- See Section 8 for personal protective equipment.

- See Section 13 for disposal considerations.

SECTION-7: Handling and storage

SECTION 7: Handling and storage

7.1 Precautions for safe handling
- Use only in a chemical fume hood or well-ventilated area.
- Avoid breathing vapors/mist. Avoid contact with skin, eyes, and clothing.
- Keep away from heat, sparks, open flames, and hot surfaces. No smoking.
- Use non-sparking tools and explosion-proof equipment where applicable.
- Ground/bond container and receiving equipment.

7.2 Conditions for safe storage, including any incompatibilities
- Store tightly closed in a cool, dry, well-ventilated place.
- Store away from ignition sources.
- Keep container protected from physical damage.
- Incompatible materials: Not available.

7.3 Specific end use(s)
- For laboratory/research use only.

SECTION 8: Exposure controls / personal protection

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
- Occupational exposure limits: Not available.

8.2 Exposure controls
Engineering controls:
- Use local exhaust ventilation or fume hood.
- Provide eyewash station and safety shower.

Personal protective equipment (PPE):
Eye/face protection:
- Safety glasses with side shields or chemical splash goggles.

Skin protection:
- Wear protective gloves (material not available).
- Wear lab coat or chemical-resistant protective clothing.

Respiratory protection:
- If ventilation is inadequate, use appropriate respiratory protection.
- Specific respirator type: Not available.

Hygiene measures:
- Wash hands after handling.
- Remove contaminated clothing and wash before reuse.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Test	Result
Appearance	No data available
IR spectrum	No data available
pH	No data available
Solubility	No data available

Property	Value
a) Physical State	No data available
b) Color	No data available
c) Odor	No data available
d) pH	No data available
e) Vapour Pressure	No data available
f) Viscosity	No data available
g) Initial Boiling Point and boiling range	No data available
h) Melting Point / Freezing Point	No data available
i) Auto Ignition Temperature	No data available
j) Flash Point	No data available
k) Explosion Limit, Lower	No data available
l) Explosion Limit, Upper	No data available
m) Decomposition Temperature	No data available
n) Loss on Drying	No data available
o) Relative Density	No data available
p) Solubility (in DMSO)	No data available
q) Oxidizing Properties	No data available

SECTION 10: Stability and reactivity

SECTION 10: Stability and reactivity

10.1 Reactivity

- Not available.

10.2 Chemical stability
- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
- Not available.

10.4 Conditions to avoid
- Heat, flames, sparks, and other ignition sources.
- Incompatible conditions: Not available.

10.5 Incompatible materials
- Not available.

10.6 Hazardous decomposition products
- Not available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
- Acute toxicity: Ethylene oxide is rapidly taken up via the lungs, distributed, and metabolized to ethylene glycol and to glutathione conjugates. Ethylene oxide can be absorbed though the skin from the gas phase or from aqueous solutions and is uniformly distributed throughout the body. The acute inhalation toxicity of ethylene oxide in rodents and dogs is low. Acute exposure leads to central nervous system effects; headache, nausea and vomiting are often evident. High concentrations can cause pulmonary edema and damage the cardiovascular system.
- Skin corrosion/irritation: Irritation of the skin has been reported in workers exposed to ethylene oxide. Ethylene oxide easily penetrates through the clothing and footwear, causing skin irritation and dermatitis with the formation of blisters, fever and leukocytosis.
- Serious eye damage/eye irritation: Exposure to high concentrations of ethylene oxide vapor or eye splashes of concentrated solutions can cause eye irritation, inflammation of the eye membrane and corneal injury. Exposure to ethylene oxide has also been linked to the development of cataracts.
- Respiratory or skin sensitization: No data available.
- Germ cell mutagenicity: Ethylene oxide is a directly acting alkylating agent that induces a sensitive, persistent dose-related increase in the frequency of chromosomal aberrations and sister chromatid exchange in peripheral lymphocytes and micronuclei in bone marrow cells of exposed workers; induces gene mutations and heritable translocations in germ cells of exposed rodents; and is a powerful mutagen and clastogen at all phylogenetic levels.
- Carcinogenicity: There is limited evidence in humans for the carcinogenicity of ethylene oxide and sufficient evidence in experimental animals for the carcinogenicity of ethylene oxide. In inhalation studies, ethylene oxide has induced a wide range of tumours (e.g., leukaemia, lymphoma, brain, lung). Overall evaluation: Ethylene oxide is carcinogenic to humans (Group 1).
- Reproductive toxicity: Evidence from epidemiological studies of reproductive effects (primarily spontaneous abortions) of ethylene oxide in humans is limited. In experimental animals, reproductive effects occur at lowest concentration (>90 mg/m3), including reductions in litter size, increased post-implantation losses, alterations in sperm morphology, and changes in sperm count and motility. In experimental animals, ethylene oxide is fetotoxic in the presence and absence of maternal toxicity; it is teratogenic only at very high concentrations (above about 1600 mg/m3).
- STOT-single exposure: No data available.
- STOT-repeated exposure: The major effects seen in workers exposed to ethylene oxide at low levels for several months or years are irritation of the eyes, skin, and mucous membranes and problems in the functioning of the brain

and nerves. Neurological effects (primarily sensorimotor polyneuropathy) have been observed in workers exposed to relatively high concentrations. Reported effects in studies in animals were restricted primarily to those on the hematological and nervous systems.
- Aspiration hazard: No data available.

Likely routes of exposure
- The route of likely greatest exposure and focus of the human health is inhalation from air. Ethylene oxide can be absorbed though the skin from the gas phase or from aqueous solutions.

Symptoms related to the physical, chemical and toxicological characteristics
- Ocular, respiratory, and dermal irritation; sensitization. Acute exposure leads to central nervous system effects including headache, nausea and vomiting. Neurological effects including peripheral neuropathy, impaired hand-eye coordination and memory loss have been reported in chronically-exposed workers. Skin irritation and dermatitis with blisters may occur. High concentrations can cause pulmonary edema and damage the cardiovascular system.

SECTION 12: Ecological information

SECTION 12: Ecological information

12.1 Toxicity
- Not available.

12.2 Persistence and degradability
- Not available.

12.3 Bioaccumulative potential
- Not available.

12.4 Mobility in soil
- Not available.

12.5 Results of PBT and vPvB assessment
- Not available.

12.6 Endocrine disrupting properties
- Not available.

12.7 Other adverse effects
- Not available.

SECTION 13: Disposal considerations

SECTION 13: Disposal considerations

13.1 Waste treatment methods
- Dispose of contents/container in accordance with local/regional/national/international regulations.
- Treat as hazardous waste due to flammable solvent and reactive/toxic components.
- Do not discharge to drains.
- Contaminated packaging: Dispose of as unused product unless properly cleaned.

SECTION 14: Transport information

SECTION 14: Transport information

- Transport classification may depend on concentration and local regulations.

14.1 UN number
- Not available.

14.2 UN proper shipping name
- Not available.

14.3 Transport hazard class(es)
- Not available.

14.4 Packing group
- Not available.

14.5 Environmental hazards
- Not available.

14.6 Special precautions for user
- Keep away from heat/ignition sources. Keep container tightly closed and upright.

14.7 Maritime transport in bulk according to IMO instruments
- Not available.

SECTION 15: Regulatory information

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- Not available.

15.2 Chemical safety assessment
- Not available.

SECTION 16: Other information

SECTION 16: Other information

Product identification:
- Product name: Ethylene oxide solution (50 mg/mL in methanol)
- Catalog no.: CS-O-55647
- CAS no.: 75-21-8 (ethylene oxide)
- Supplier: Clearsynth Labs Ltd., Mumbai, India
- Emergency phone: +91-22-245045900

Other information:
- This SDS section text is provided for information and is not a substitute for required site-specific risk assessment.
- Not all hazard and regulatory data are available for this mixture; handle as a flammable, potentially toxic/reactive chemical solution.

Revision date:
- Not available.

DISCLAIMER

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