

 <p>CHEMLABS Quality Our Forte</p>	<p>LEONID CHEMICALS PVT. LTD., BANGALORE</p> <p>An ISO-9001:2008 Certified Company</p> <p>Quality Assurance Department</p>	<p>(CODE) DOCUMENT : WI (CODE) SECTION : W/SM (DATE) : 01.04.2011</p>	 <p>Issue : 02 Rev.: 00</p>
<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): ETHYLENE GLYCOL</p>			<p>1 Page of 1</p>

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name:
Ethylene glycol

Cat No.:
E025

Synonyms:
1, 2-Ethanediol

CAS-No. :
107-21-1

Company Information:

LEONID CHEMICALS Pvt Ltd,
62/A2, 1st Stage,
Yeshvanthpur Industrial Suburb,
Ashokpuram School Road,
Bangalore -22, Karnataka, INDIA
Ph- +91-80-23378354
Fax: +918023378354/23377126

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]
Acute toxicity, Oral (Category 4)
Classification according to EU Directives 67/548/EEC or 1999/45/EC
Harmful if swallowed.

Label elements
Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram

Signal word Warning

Hazard statement(s)

H302 Harmful if swallowed.

Precautionary statement(s) none

Supplemental Hazard

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<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): ETHYLENE GLYCOL</p>			<p>2 Page of 1</p>

Statements

none

According to European Directive 67/548/EEC as amended.

Hazard symbol(s)

R-phrase(s)

R22 Harmful if swallowed.

S-phrase(s) none

Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula: C₂H₆O₂

Molecular Weight: 62.07 g/mol

CAS-No.: 107-21-1

4. FIRST AID MEASURES

Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed

When ingested early symptoms mimic alcohol inebriation and are followed by nausea, vomiting, abdominal pain, weakness, muscle tenderness, respiratory failure, convulsions, cardiovascular collapse, pulmonary edema, hypocalcemic tetany, and severe metabolic acidosis. Without treatment, death may occur in 8 to 24 hours. Victims who survive the initial toxicity period usually develop renal failure along with brain and liver damage., Exposure to and/or consumption of alcohol may increase toxic effects.

Indication of any immediate medical attention and special treatment needed

no data available

5. FIREFIGHTING MEASURES

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<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): ETHYLENE GLYCOL</p>			<p>3 Page of 1</p>

Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture

Carbon oxides

Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

no data available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Hygroscopic.

Specific end uses

no data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components with workplace control parameters

Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): ETHYLENE GLYCOL</p>			<p>4 Page of 1</p>

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique

(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Immersion protection

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: > 480 min

Splash protection

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: > 30 min

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

a) Appearance Form: liquid

Colour: colourless

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<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): ETHYLENE GLYCOL</p>		<p>5 Page of 1</p>	

- b) Odour: no data available
 - c) Odour Threshold: no data available
 - d) pH: no data available
 - e) Melting point/freezing point
Melting point/range: -13 °C
 - f) Initial boiling point and boiling range: 196 - 198 °C
 - g) Flash point: 111 °C - closed cup
 - h) Evaporation rate: 1
 - i) Flammability (solid, gas): no data available
 - j) Upper/lower flammability or explosive limits
Upper explosion limit: 15.3 %(V)
Lower explosion limit: 3.2 %(V)
 - k) Vapour pressure: 0.11 hPa at 20 °C
 : 0.13 hPa at 20 °C
 - l) Vapour density: 2.14 - (Air = 1.0)
 - m) Relative density: 1.113 g/mL at 25 °C
 - n) Water solubility: completely miscible soluble
 - o) Partition coefficient: octanol/waterlog POW: -1.36
 - p) Autoignition temperature: no data available
 - q) Decomposition temperature: no data available
 - r) Viscosity: no data available
 - s) Explosive properties: no data available
 - t) Oxidizing properties: no data available
- Other safety information**
no data available

10. STABILITY AND REACTIVITY

Reactivity

no data available

Chemical stability

no data available

Possibility of hazardous reactions

no data available

Conditions to avoid

no data available

Incompatible materials

Strong acids, Strong oxidizing agents, Strong bases, Aldehydes, Aluminum

Hazardous decomposition products

Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

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<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): ETHYLENE GLYCOL</p>			<p>6 Page of 1</p>

Information on toxicological effects

Acute toxicity

LD50 Oral - rat - 4.700 mg/kg

LD50 Dermal - rabbit - 10.626 mg/kg

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

Eyes - rabbit - Mild eye irritation - 24 h

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

This product is or contains a component that is probably not carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

Laboratory experiments have shown teratogenic effects.

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Specific target organ toxicity - single exposure

no data available

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion Harmful if swallowed.

Skin May be harmful if absorbed through skin. May cause skin irritation.

Eyes Causes eye irritation.

Signs and Symptoms of Exposure

When ingested early symptoms mimic alcohol inebriation and are followed by nausea, vomiting, abdominal pain, weakness, muscle tenderness, respiratory failure, convulsions, cardiovascular collapse, pulmonary edema, hypocalcemic tetany, and severe metabolic acidosis. Without treatment, death may occur in 8 to 24 hours. Victims who survive the initial toxicity period usually develop renal failure along with brain and liver damage. Exposure to and/or consumption of alcohol may increase toxic effects.

Additional Information

RTECS: KW2975000

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<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): ETHYLENE GLYCOL</p>			<p>7 Page of 1</p>

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - 18.500 mg/l - 96 h

LC50 - Leuciscus idus (Golden orfe) - > 10.000 mg/l - 48 h

NOEC - Pimephales promelas (fathead minnow) - 32.000 mg/l - 7 d

NOEC - Pimephales promelas (fathead minnow) - 39.140 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia magna (Water flea) - 74.000 mg/l - 24 h

NOEC - Daphnia - 24.000 mg/l - 48 h

LC50 - Daphnia magna (Water flea) - 41.000 mg/l - 48 h

Persistence and degradability

no data available

Bioaccumulative potential

Does not bioaccumulate.

Bioaccumulation other fish - 61 d -50 mg/l

Bioconcentration factor (BCF): 0.60

Mobility in soil

no data available

Results of PBT and vPvB assessment

no data available

Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

UN number

ADR/RID: - IMDG: - IATA: -

UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

Transport hazard class(es)

ADR/RID: - IMDG: - IATA: -

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<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): ETHYLENE GLYCOL</p>			<p>8 Page of 1</p>

Packaging group

ADR/RID: - IMDG: - IATA: -

Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

Special precautions for user

no data available

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006. Safety, health and environmental regulations/legislation specific for the substance or mixture

no data available

Chemical Safety Assessment


no data available

16. OTHER INFORMATION

Further information

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Leonid Chemicals Pvt. Ltd. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Leonid Chemicals Pvt. Ltd. has been advised of the possibility of such damages.



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		(CODE) SECTION : E039/E025	
Title: SPECIFICATION MANUAL - ETHYLENE GLYCOL			Issue : 02 Rev.: 00 1 Page of 1

Specification manual - Ethylene Glycol

$C_2H_6O_2$

Mol Wt: 62.06

Product : Ethylene Glycol LR
Description : Clear viscous liquid
Cat No : E025
Cas No : 107-21-1
Prepared Date : 07.03.2005
Approved Date : 07.03.2005

REVISION HISTORY			
Issue/Rev	Description of Change	Author	Effective Date
01/00	Initial Release	S. Paul Joshua	07.03.2005
02/00	Reviewed no changes	S. Paul Joshua	01.04.2011
Next Review Due :	02.04.2015		
To be reviewed by :	Head-QC/QA		

Sl. No.	Tests	Specification
		LR
1	Assay (GC)	Min 99%
2	Boiling range	194-199°C

Approved By: S.Paul Joshua, Head Quality Control and Quality Assurance