

Ministry of Employment and Labor	Material Safety Data Sheet	Industrial Accident Prevention Korea Occupational Safety and Health Agency (KOSHA)
		AA00569-0000000021

1. PRODUCT AND COMPANY IDENTIFICATION

A. Product Name ETHYLENE CARBONATE

B. Recommended Use and Restrictions on Use

Recommended Use Used in the manufacture of lithium battery electrolytes and electrolyte additives. It is also utilized in chemical synthesis fields such as polycarbonate, superabsorbent polymers, lubricant additives, and pharmaceuticals. Additionally, it is partially used as a substitute for toxic solvents in areas such as paint hardeners, coatings, and adhesives.

Restrictions on Use Not available

C. Supplier Information (For imports, provide local supplier information for emergency contact)

Company Name GloryGlobal Co., Ltd.

Address Room 1004, Seoul-Technopark, inside Seoul Tech, 232, Gongneung-ro, Nowon-gu, Seoul, Korea 01811

Emergency Contact Number 82-2-6223-0862

D. Additional Manufacturer/Supplier Information

No data available

2. Hazards identification

A. Hazard Classification

UN Classification according to Regulation (EC) No. 1272/2008 (CLP) Eye Irrit. 2, H319: Causes serious eye irritation

Hazard information for humans and the environment UN This product must be labeled in accordance with the calculation method specified by Regulation (EC) No. 1272/2008.

Classification system UN Classification is based on the latest version of Regulation (EC) No. 1272/2008, supplemented by company data and literature references.

B. GHS Label Elements



Signal Word: Warning

Hazard Statements:

H302	Harmful if swallowed
H319	Causes serious eye irritation
H373	May cause damage to organs through prolonged or repeated exposure if swallowed (specific organ information to be inserted where applicable)

Precautionary Statements

Prevention:

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/eye protection/face protection.

Response:

P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314	Get medical advice/attention if you feel unwell.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

C. Other Hazards Not Classified Under the GHS (e.g., Dust Explosion Hazard)

Health:	2 (Moderate)
Flammability:	1 (Slight)
Reactivity:	1 (Slight)

D. PBT and vPvB Assessment

PBT

(Persistent, Bioaccumulative, and Toxic): Not applicable

vPvB (very Persistent and very Bioaccumulative): Not applicable

3. Composition / Information on Ingredients

Substance Name 1	ETHYLENE CARBONATE
Synonyms (Common Name)	GLYCOL CARBONATE, 1,3-Dioxolan-2-one
CAS Number	96-49-1
Content (%)	99.5~99.99%
Substance Name 2	WATER
CAS Number	7732-18-5

Content (%) 0.002~0.05%

4. First Aid Measures

- | | |
|-----------------------|---|
| A. Eye Contact | Rinse cautiously with water for at least 15 minutes. Seek medical attention. |
| B. Skin Contact | Wash thoroughly with soap and water. Seek medical attention. If irritation persists, get medical advice/attention. |
| C. Inhalation | If inhaled, move the person to fresh air. If the person is not breathing, perform artificial respiration. Seek medical attention. |
| D. Ingestion | Do not give anything by mouth to an unconscious person. Rinse mouth with water. Seek medical attention. |
| E. Notes to Physician | Not available |

5. Firefighting Measures

- | | |
|--|--|
| A. Suitable (and Unsuitable) Extinguishing Media | |
| Suitable extinguishing media: | Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide. |
| B. Specific Hazards Arising from the Chemical | |
| | Not available |
| C. Special Protective Equipment and Precautions for Firefighters | |
| | Wear self-contained breathing apparatus (SCBA) if necessary during firefighting. |

6. Accidental Release Measures

- | | |
|--|---|
| A. Personal Precautions, Protective Equipment and Emergency Procedures | |
| | Wear appropriate personal protective equipment. |
| | Avoid generating dust. |
| | Avoid inhalation of vapors, mists, or gases. |
| | Ensure adequate ventilation. Do not breathe dust. |
| B. Environmental Precautions | |
| | Prevent the product from entering drains or waterways. |
| C. Methods and Materials for Containment and Cleaning Up | |
| | Avoid creating dust during waste handling and collection. |
| | Collect using a clean shovel or scoop. |
| | Store in a properly sealed container for disposal. |
| D. Reference to Other Sections | |
| | For safe handling information, see Section 7. |
| | For personal protective equipment, see Section 8. |
| | For disposal considerations, see Section 13. |

7. Handling and Storage

A. Precautions for Safe Handling

Install proper ventilation and exhaust systems at the workplace.

Keep container tightly closed.

Avoid exposure to heat and direct sunlight.

Avoid contact with eyes and skin.

Refer to Section 8 for general occupational hygiene measures.

Fire and Explosion Prevention: Follow standard fire prevention practices.

B. Conditions for Safe Storage, Including Any Incompatibilities

Store in a cool, dry, and well-ventilated area.

Store only in the original containers.

Storage and Incompatible Materials:

Keep away from food.

Avoid storing with oxidizing or acidic substances.

Avoid contact with reducing agents.

Avoid storing with alkaline materials.

Storage Conditions:

Keep containers tightly sealed.

Store in sealed containers in a cool, dry place.

C. Specific End Use(s)

Not available

8. Exposure Controls / Personal Protection

A. Control Parameters

Occupational Exposure Limits:

This product does not contain substances with occupational exposure limits.

Additional Information:

Valid lists during the manufacturing period should be used as a reference.

B. Appropriate Engineering Controls

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

Avoid contact with food, beverages, and animal feed.

Remove contaminated clothing and protective equipment before entering eating areas.

Wash hands before breaks and at the end of the workday.

Avoid contact with eyes and skin.

For technical facility design, refer to Section 7.

C. Personal Protective Equipment (PPE)

Respiratory Protection

For protection against exposure, use a P95 (US) or P1 (EU EN 143) particulate respirator.

For higher protection, use V/AG/P99 (US) or ABEK-P2 (EU EN 143) respirator cartridges.

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Eye Protection	Use safety goggles and a face shield suitable for chemical protection. Install eyewash stations and emergency showers near the working area.
Hand Protection	Gloves should be inspected before use. Use proper glove removal techniques (do not touch glove outer surface) to avoid skin contact. Contaminated gloves should be disposed of in accordance with applicable laws and Good Laboratory Practices (GLP).
Selection of Protective Gloves	The selected gloves must satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
Body Protection	The type of protective equipment must be selected according to the concentration and amount of the hazardous substance at the specific workplace.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and after work.

9. Physical and Chemical Properties

A. Appearance

Physical State Solid

Color Colorless

B. Odor Slight odor

C. Odor Threshold Not available

D. pH (50 g/L at 25 °C) '7.3

E. Changes in Condition

Melting Point /
Freezing Point 35~38°C

Boiling Point 248°C (76mmHg)

Dew Point /
Condensation Point Not available

F. Flash Point 160°C

G. Flammability (solid, gas) Not available

Ignition Point Not available

H. Decomposition
Temperature Not available

I. Autoignition This product is not self-igniting.

J. Explosion Hazard This product is not explosive.

Explosion Limits

Lower Not available

Upper Not available

K. Oxidizing Properties	Not available
L. Vapor Pressure (at 36.4 °C)	0.02mmHg
M. Density (at 25 °C)	1.321g/cm3
Relative Density	Not available
Vapor Density	Not available
Evaporation Rate	Not available
N. Solubility (in water at 20 °C)	214g/l
O. n-Octanol/Water Partition Coefficient	Not available
P. Viscosity	
Dynamic Viscosity	Not available
Kinematic Viscosity	Not available
Q. Other Information	The product is a colorless transparent liquid above 35 °C and a crystalline solid at room temperature.

10. Stability and Reactivity

A. Chemical Stability and Possibility of Hazardous Reactions

Stable under recommended storage conditions.

Possibility of hazardous reactions: No data available

B. Conditions to Avoid (e.g., static discharge, shock, vibration)

Not available

C. Incompatible Materials

Not available

D. Hazardous Decomposition Products

Not available

E. Materials to Avoid Mixing

With

Not available

11. Toxicological Information

A. Information on Likely Routes of Exposure

B. Health Hazard Information

Acute Toxicity Based on available data, the product is not classified.

 Oral LD 50, 1,000mg/kg (rat)

 Dermal Not available

 Inhalation Not available

Skin Corrosion/Irritation	Based on available data, the product is not classified.
Serious Eye Damage/Eye Irritation	Causes serious eye irritation.
Respiratory Sensitization	Based on available data, the product is not classified.
Skin Sensitization	Based on available data, the product is not classified.
Vcarcinogenicity	Based on available data, the product is not classified.
Germ Cell Mutagenicity	Based on available data, the product is not classified.
Reproductive Toxicity	Based on available data, the product is not classified.
Specific Target Organ Toxicity – Single Exposure	Based on available data, the product is not classified.
Specific Target Organ Toxicity – Repeated Exposure	Based on available data, the product is not classified.
Aspiration Hazard	Based on available data, the product is not classified.

12. Ecological Information

A. Ecotoxicity	Not available
B. Persistence and degradability	
Persistence	Not available
Degradability	Not available
C. Bioaccumulative potential	
Bioaccumulation	Not available
Biodegradability	Not available
D. Mobility in soil	Not available
E. Other adverse effects	Not available
F. Results of PBT and vPvB assessment	Not applicable
G. Additional adverse effects	Not available
H. Other ecological information	Generally not hazardous to water

13. Disposal Considerations

A. Waste treatment methods	<p>Remaining material and non-recyclable solutions should be handed over to a licensed waste disposal company.</p> <p>Dissolve or mix with a flammable solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.</p>
B. Precautions for disposal	Dispose of in accordance with regulations specified in the Waste Control Act.

14. Transport Information

A. UN Number	Not applicable
B. Proper shipping name	Not applicable
C. Transport hazard class	
IMDG (International Maritime Dangerous Goods)	Not applicable
IATA (International Air Transport Association)	Not applicable
D. Packing group	Not applicable
E. Marine pollutant	Not applicable
F. Special precautions for user	Not applicable
G. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable
H. Transport/Additional information	The above product is not classified as hazardous
I. UN "Model Regulation"	Not applicable

15. Regulatory Information

A. Safety, health, and environmental regulations/legislation specific for the substance or mixture	
MAK (German Maximum Workplace Concentration)	Not applicable
B. Directive 2012/18/EU Annex I – Named dangerous substances	Not applicable
C. National regulations – Water hazard class (WGK)	Generally not hazardous to water
D. Other regulations, restrictions, and prohibitions	Designated waste
REACH Regulation Annex XIV (Authorization List) SVHC Candidate List (as of 2017-12-01): Not applicable	Not applicable
REACH Regulation Annex XVII (Restriction List) (as of 2017-03-02)	Not applicable
REACH Regulation Annex XIV Authorized Substances List (as of 2017-08-14)	Not applicable
E. Chemical Safety Assessment	Chemical safety assessment has not been carried out

16. Other Information

A. Source of data

B. Date of first issue

C. Number of revisions / Date of latest revision

Number of revisions

Date of last revision 2025-03-20

D. Others

Abbreviations

ADR: Accord europeen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC 50:Lethal Concentration, 50 percent

LD 50:Lethal does, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Eye Irrit. 2: Serious eye damage/eye irritation - Category

This information is believed to be reliable but does not constitute a warranty as to the accuracy or suitability of the data.