

Safety Data Sheet(SDS)

Revision date : 01-06-2026

1. Identification

- 1) Product identifier : EL_ETHYLENE
- 2) Relevant identified uses of the substance or mixture and uses advised against
 - Relevant identified uses
 - 1.Raw materials and intermediates
 - Restrictions on use
 - Use for recommended use only
 - Do not use it for weapons manufacturing and related purposes.
- 3) Supplier information
 - Seller
 - Company name : Lotte Daesan Petrochem Corporation
 - Address : 82 Dokgot 1-ro, Daesan-eup, Seosan-si, Chungcheongnam-do
 - Telephone number : +82-41-689-5114
 - Emergency phone number : (Control Room) +82-41-689-5119
 - Fax number : +82-41-689-5985

2. Hazards identification

- 1) Hazard classification
 - Flammable gases Category 1
 - Gases under pressure Liquefied gas

- 2) Allocation label elements

Hazard pictograms



Signal word

- DANGER

Hazard statements

H220 Extremely flammable gas

H280 Contains gas under pressure; may explode if heated

Precautionary statements

- Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

- Response

P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381 In case of leakage, eliminate all ignition sources.

- Storage

P403 Store in a wellventilated place.

P410+P403 Protect from sunlight. Store in a wellventilated place.

3) Other hazards:

According to experience and information provided, this product does not affect harmful effects when using and handling it as a regulation.

3. Composition/Information on ingredients

Chemical name	Common name	CAS No.	Content(wt%)
Ethylene	Acetene	74-85-1	100

4. First-aid measures

1) Following eye contact

- Seek immediate medical assistance.

2) Following skin contact

- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- For hot product, immediately immerse in or flush the affected area with large amounts of cold water to dissipate heat.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- Remove and isolate contaminated clothing and shoes.
- Seek immediate medical assistance.

3) Following inhalation

- Administer oxygen if breathing is difficult.
- Give artificial respiration if victim is not breathing.
- Keep victim warm and quiet.
- Move to fresh air.
- Seek immediate medical assistance.

4) Following ingestion

- Seek immediate medical assistance.
- 5) Delayed and immediate effects and also chronic effects from short and long term exposure
No data available
- 6) Advice to physician
 - Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. Fire-Fighting measures

- 1) Suitable (and unsuitable) extinguishing media
 - Suitable extinguishing media
 - CO₂.
 - Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.
 - Dry chemical.
 - Use dry sand or earth to smother fire.
 - Unsuitable extinguishing media
 - Do not use a solid water stream as it may scatter and spread fire.
- 2) Special hazards arising from the substance or mixture
 - Pyrolytic product
 - Hazardous decomposition products due to incomplete combustion
 - Risk of fire and explosion
 - Will be easily ignited by heat, sparks or flames.
 - Will form explosive mixtures with air.
 - Containers may explode when heated.
 - May violently polymerize and result in fire and explosion.
 - Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
 - Extremely flammable.
 - Silane will ignite spontaneously in air.
 - Vapors may travel to source of ignition and flash back.
 - Some may burn but none ignite readily.
 - Some of these materials, if spilled, may evaporate leaving a flammable residue.
 - When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards.
 - Other
 - Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
 - Some may be irritating if inhaled at high concentrations.
 - Vapors may cause dizziness or asphyxiation without warning.
 - Fire may produce irritating, corrosive and/or toxic gases.
- 3) Special protective equipment for firefighters
 - Move containers from fire area if you can do it without risk.
 - Ruptured cylinders may rocket.
 - Use extinguishing agent suitable for type of surrounding fire.
 - Vapors from liquefied gas are initially heavier than air and spread along ground.
 - Damaged cylinders should be handled only by specialists.

- DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.
- Evacuate area and fight fire from a safe distance.
- Fire involving Tanks: ALWAYS stay away from tanks engulfed in fire.
- Fire involving Tanks: Cool containers with flooding quantities of water until well after fire is out.
- Fire involving Tanks: Do not direct water at source of leak or safety devices; icing may occur.
- Fire involving Tanks: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Fire involving Tanks: For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.
- Fire involving Tanks: Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.

6. Accident release measures

1) Personal precautions, protective equipment and emergency procedures

- Stop leak if you can do it without risk.
- The very fine particles can cause a fire or explosion, eliminate all ignition sources.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Ventilate the contaminated area.
- All equipment used when handling the product must be grounded.
- Allow substance to evaporate.
- Do not direct water at source of leak.
- Do not touch or walk through spilled material.
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Isolate area until gas has dispersed.
- Please note that materials and conditions to be avoided.
- Some of these materials, if spilled, may evaporate leaving a flammable residue.

2) Environmental precautions

- Prevent entry into waterways, sewers, basements or confined areas.
- Prevent spreading of vapors through sewers, ventilation systems and confined areas.

3) Methods and materials for containment and cleaning up

- Dike and collect water used to fight fire.

7. Handling and storage

1) Precautions for safe handling

- All equipment used when handling the product must be grounded.
- DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION;
- Follow all MSDS/label precautions even after container is emptied because they may retain product residues.
- Handling refer to engineering control/personal protection section.
- Please note that materials and conditions to be avoided.

2) Conditions for safe storage (including any incompatibilities)

- Containers can build up pressure if exposed to heat (fire).

- Store in a closed container.

8. Exposure controls & personal protection

1) Chemical exposure limits, Biological exposure standard

Components	ACGIH regulations	Biological limit values
Ethylene	200 ppm TWA	No data available

2) Appropriate engineering controls

- Ensure adequate ventilation and exhaust ventilation at the workplace.

3) Personal protective equipment

- Respiratory protection
 - If you have a direct contact or exposed to the material, wear the appropriate form of respiratory protection certified.
- Eye protection
 - If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.
- Hand protection
 - Wear chemical safety gloves.
- Skin protection
 - Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

9. Physical and chemical information

Property name	Values	Source
Appearance		
Physical state	Gas	
Color	colourless	ICSC
Odor	sweet; slight	KISChem
Odor threshold	260 ppm	KISChem
pH	No data available	
Melting point/freezing point	-169.2 °C	ECHA
Initial boiling point and boiling range(°C)	-104 °C	ECHA
Flash point(°C)	-136 °C	KISChem
Evaporation rate	No data available	
Flammability(solid, gas)	Flammable gas	ICSC
Upper/lower flammability or explosive limits	Upper 36 %(V) Lower 2.7 %(V)	ICSC

Vapour pressure	6,946 kPa (25 °C)	KISChem
Solubility(ies)	0.131 g/L (25 °C)	KISChem
Vapour density	0.98	KISChem
Relative density	No data available	
n-octanol/water partition coefficient	logPow : 1.13 (20 °C)	ECHA
Auto ignition temperature	450 °C	ECHA
Decomposition temperature	No data available	
Viscosity(mm ² /s, 40°C)	0.01 cP (20°C)	KISChem
Molecular weight(mass)	28.05 g/mol	
Density	0.39 g/cm ³ (20 °C)	KISChem
Specific gravity	0.57 /-130.8 °C	

10. Stability and hazardous reactivity

1) Chemical stability and Possibility of hazardous reactions

- Vapors may travel to source of ignition and flash back.
- When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards.
- Will be easily ignited by heat, sparks or flames.
- Will form explosive mixtures with air.
- Containers may explode when heated.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Extremely flammable.
- Fire may produce irritating, corrosive and/or toxic gases.
- May violently polymerize and result in fire and explosion.
- Silane will ignite spontaneously in air.
- Some may be irritating if inhaled at high concentrations.
- Some may burn but none ignite readily.
- Vapors may cause dizziness or asphyxiation without warning.

2) Conditions to avoid

- Heat, contamination.
- Heat.
- Ignition source(heat, spark, flame, etc.).

3) Incompatible materials

- Combustible material

4) Hazardous decomposition products

- Irritating, corrosive and/or toxic gas.

11. Toxicological information

1) Information on the likely routes of exposure

- Inhalation
 - Can be absorbed in body by inhalation.

2) Delayed and immediate effects and also chronic effects from short and long term exposure

- Acute toxicity
 - Acute toxicity(Oral)
 - No data available
 - Acute toxicity(Dermal)
 - No data available
 - Acute toxicity(Inhalation:Gases)
 - No data available
 - Acute toxicity(Inhalation:Vapours)
 - No data available
 - Acute toxicity(Inhalation:Dust/mist)
 - No data available
- Skin corrosion/irritation
 - No data available
- Serious eye damage/eye irritation
 - No data available
- Respiratory sensitization
 - No data available
- Skin sensitization
 - No data available
- Carcinogenicity
 - 3 (IARC)
A4 (ACGIH)
- Germ cell mutagenicity
 - No data available
- Reproductive toxicity
 - No data available
- Specific target organ toxicity single exposure
 - No data available
- Specific target organ toxicity repeated exposure

- No data available
- Aspiration hazard
 - No data available

12. Ecological information

1) Ecotoxicity

- Hazardous to the aquatic environment, short-term (acute)
No data available
- Hazardous to the aquatic environment, long-term (chronic)
No data available
- Fish
No data available
- Crustaceans
No data available
- Aquatic algae
No data available

2) Persistence and degradability

- Degradability
No data available
- Biodegradation
No data available

3) Bioaccumulative potential

- n-octanol water partition coefficient
1.13 log Kow
- Bioconcentration factor(BCF)
4 ((Pimephales promelas (Fish, fresh water))

4) Mobility in soil

No data available

5) Other adverse effects

No data available

13. Disposal considerations

- 1) Disposal methods
 - Empty containers should be taken to an approved waste handling site for recycling or disposal.
- 2) Precautions (including disposal of contaminated container or package)
 - Dispose of in accordance with local regulations.
 - Send to a licensed waste management company.

14. Transport information

- 1) UN No. : 1962
 - 2) Proper shipping name : ETHYLENE
 - 3) Hazard class : 2.1
 - 4) Packing group : Not applicable
 - 5) Marine pollutant : No
 - 6) Special precautions for user related to transport or transportation measures :
 - Emergency measures in case of fire : F-D
 - Emergency measures in the effluent : S-U
- ADR
 - Tunnel restriction code : B/D
 - IMDG
 - Marine pollutant : No
 - Air transport(IATA)
 - UN No. : 1962
 - Proper shipping name : ETHYLENE
 - Class or division : 2.1
 - Packing group : Not applicable

15. Regulatory information

Australia Industrial Chemicals Notification and Assessment Act

- Inventory - Australia - Inventory of Industrial Chemicals (AIIC)
 - Ethylene : Present

China Inventory of Existing Chemical Substances (IECSC)

- Inventory - China - Inventory of Existing Chemical Substances (IECSC)
 - Ethylene : Present [39378]

92/32/EEC

- Not applicable

European Union Official Journal of the European Communities 15 June 1990 - Annex Based on Article 13 of Directive 67/548/EEC Amended by Directive 79/831/EEC

- Inventory - European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
- Ethylene : 200-815-3

Japan - ISHL Ordinance Hazardous Substances Whose Names Are to be Indicated on the Label

Japan Law Concerning the Examination and Regulations of Manufacture, etc. of Chemical Substances

- Inventory - Japan - Existing and New Chemical Substances (ENCS)
- Ethylene : (2)-12

New Zealand Environmental Protection Authority, Inventory of Chemicals

- Inventory - New Zealand - Inventory of Chemicals (NZIoC)
- Ethylene : HSNO Approval: HSR001001

Turkey Regulation on Inventory and Control of Chemicals

- Not applicable

Taiwan Chemical Substance Inventory

- Inventory - Taiwan - Taiwan Chemical Substance Inventory (TCSI)
- Ethylene : Present

U.S. Toxic Substances Control Act

Vietnam National Chemicals Inventory (NCI)

- Inventory - Vietnam - National Chemicals Inventory (NCI) (DRAFT)
- Ethylene : Present 00391

16. Other information

1) Reference

NCIS, KOSHA, Montreal Protocol, ECHA, OECD SIDS, EU IUCLID, HSDB(PubChem), NITE, NTP, ACGIH, IARC, NIOSH, ChemIDplus, EPA, EPI Suite, INCHEM

2) Issue date : 26-12-2022

3) Revision date

○ Revised date count : 3-1

○ Last revised date : 01-06-2026

4) Other

ACGIH : American Conference of Governmental Industrial Hygienists

ADR : Agreement Concerning the International Carriage of Dangerous Goods by Road

ATE : The Acute Toxicity Estimate

ECHA : European Chemicals Agency

EPA : United States Environmental Protection Agency

EPI Suite : The Estimation Programs Interface for Windows

EU IUCLID : International Uniform Chemical Information Database

HSDB : Hazardous Substances Data Bank

IARC : International Agency for Research on Cancer

IATA : International Air Transport Association

IMDG : International Maritime Dangerous Goods Codes

INCHEM : Internationally Peer Reviewed Chemical Safety Information

M-Factor : The Multiplication Factor

NIOSH : National Institute of Occupational Safety and Health

NITE : National Institute of Technology and Evaluation(JAPAN)

NTP : National Toxicology Program

SCL : Specific Concentration Limit

OECD SIDS : Organization for Economic Co-operation and Development Screening Information Dataset

GHS/EN