

Safety Data Sheet(SDS)

According to Regulation (EU) No. 2020/878

Version : 3-1

Revision date : 01-06-2026

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

1.1. Product identifier

Product identifier : EL_ETHYLENE

Other means of identification : No data

1.2. Relevant identified uses of the substance or mixture and uses advised against

○ Relevant identified uses

1.Raw materials and intermediates

○ Uses advised against

Use for recommended use only

Do not use it for weapons manufacturing and related purposes.

1.3. Details of the supplier of the safety data sheet

○ Seller

Company name : Lotte Daesan Petrochem Corporation

Address : 82 Dokgot 1-ro, Daesan-eup, Seosan-si, Chungcheongnam-do

Telephone number : +82-41-689-5114

Fax number : +82-41-689-5985

Email : www.ldpc.co.kr (contact)

1.4. Emergency telephone number

Emergency phone number : (Control Room) +82-41-689-5119

Opening hours : 08:30~17:30 (GMT+9)

Other comments(e.g. language(s) of the phone service) : English

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

- Flammable gases Category 1A
- Gases under pressure Compressed gas
- Specific target organ toxicity - single exposure Category 3(Narcotic effects)

2.2. Label elements

Hazard pictograms



Signal word

- DANGER

Hazard statements

H220 Extremely flammable gas

H280 Contains gas under pressure; may explode if heated

H336 May cause drowsiness or dizziness

Precautionary statements

- Prevention

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

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

- Response

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312 Discomfort call a POISON CENTER / toxins center / physician if you feel unwell.

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 well-ventilated place.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P410+P403 Protect from sunlight. Store in a well-ventilated place.

- Disposal

P501 Discard the contents/containers in accordance with the laws and laws related to waste.

2.3. Other hazards

- No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance name	1) CAS No 2) EC No	Classification	1) Index number 2) SCL 3) M-Factor 4) ATE	Content(wt%)
Ethylene	1) 74-85-1 2) 200-815-3	Flam. Gas 1A, Press. Gas (Comp.), STOT SE 3	1) - 2) - 3) - 4) -	100

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

- 4.1.1. Eye contact
 - In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
 - Seek immediate medical assistance.
- 4.1.2. Skin contact
 - Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
 - In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
 - For minor skin contact, avoid spreading material on unaffected skin.
 - In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
 - In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
 - Seek immediate medical assistance.
 - Remove and isolate contaminated clothing and shoes.
- 4.1.3. Inhalation
 - Administer oxygen if breathing is difficult.
 - Give artificial respiration if victim is not breathing.
 - Keep victim warm and quiet.
 - If exposed to excessive levels of dusts or fumes, remove to fresh air and get medical attention if cough or other symptoms develop.
 - Move to fresh air.
 - Seek immediate medical assistance.
- 4.1.4. If swallowed
 - Seek immediate medical assistance.

4.2. Most important symptoms and effects, both acute and delayed

- No data available

4.3. Indication of any immediate medical attention and special treatment needed

- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media
 - CO₂.
 - Dry chemical.
 - Direct water.
 - Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.
 - Use dry sand or earth to smother fire.
 - Water spray.
- Unsuitable extinguishing media

- Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

- Some of these materials, if spilled, may evaporate leaving a flammable residue.
- Vapors may cause dizziness or asphyxiation without warning.
- 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.

5.3. Advice for firefighters

- Fire involving Tanks: Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Move containers from fire area if you can do it without risk.
- Ruptured cylinders may rocket.
- Substance may be transported in a molten form.
- 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.
- Dike fire-control water for later disposal; do not scatter the material.
- 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.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment
 - The wearing of suitable protective equipment to prevent any contamination of skin, eyes and personal clothing.
- Emergency procedures
 - Removal of ignition sources, provision of sufficient ventilation.

6.1.2. For emergency responders

- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.

- Do not direct water at source of leak.
- 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.
- Please note that materials and conditions to be avoided.
- Isolate area until gas has dispersed.
- Stop leak if you can do it without risk.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

6.3.2. For cleaning up

- Clear spills immediately.
- Don't use a brush or compressed air for cleaning surfaces or clothing.

6.3.3. Other information

- Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container.
- Dike and collect water used to fight fire.
- Absorb the liquid and scrub the area with detergent and water.

6.4. Reference to other sections

- Section 8 (protective equipment), section 13 (disposal instructions)

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Use only in a well-ventilated area.
- All equipment used when handling the product must be grounded.
- Avoid breathing vapors from heated material.
- Do not enter storage area unless adequately ventilated.
- 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.
- Loosen closure cautiously before opening.
- Please note that materials and conditions to be avoided.
- Use care in handling/storage.

7.2. Conditions for safe storage, including any incompatibilities

- Containers can build up pressure if exposed to heat (fire).
- Empty drums should be completely drained, properly bunged, and promptly returned to a drum reconditioner, or properly disposed of.
- Store in a closed container.

7.3. Specific end use(s)

- See section 1 for recommended use.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components	Occupational Exposure	ACGIH regulations	Biological limit values	DNEL/DMEL	PNEC-Values
Ethylene	No data available	200 ppm TWA	No data available	No data available	No data available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- Ensure adequate ventilation and exhaust ventilation at the workplace.

8.2.2. Individual protection measures, such as personal protective equipment

- Eye/face protection
 - If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.
- Skin protection
 - (i) Hand protection
 - Wear chemical safety gloves.
 - (ii) Other
 - No data available
- Respiratory protection
 - If you have a direct contact or exposed to the material, wear the appropriate form of respiratory protection certified.
- Thermal hazards
 - Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

8.2.3. Environmental exposure controls

- Ensure not to cause environmental pollution by discharging into rivers or other waterways.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Property name	Values	Source
Physical state	Gas	
Colour	colourless	ICSC
Odour	sweet; slight	KISChem
Melting point/freezing point	-169.2 °C	ECHA
Initial boiling point and boiling range(°C)	-104 °C	ECHA
Flammability(solid, gas)	Flammable gas	ICSC
Upper/lower flammability or explosive limits	Upper 36 %(V) Lower 2.7 %(V)	ICSC
Flash point(°C)	-136 °C	KISChem
Auto ignition temperature	450 °C	ECHA
Decomposition temperature	No data available	

pH	No data available	
Kinematic viscosity(mm ² /s, 40°C)	0.01 cP (20°C)	KISChem
Solubility	0.131 g/L (25 °C)	KISChem
Partition coefficient(n-octanol/water)	logPow : 1.13(20 °C)	ECHA
Vapour pressure	6,946 kPa (25 °C)	KISChem
Density/Relative density	No data available	
Relative Vapour density	0.98	KISChem
Particle characteristics	No data available	
Specific gravity	0.57 (-130.8 °C)	KISChem

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Property name	Values	Source
Flammable gases	Flash point : -136°C, Initial boiling point and boiling range : -104°C	

9.2.2. Other safety characteristics

- No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

- Vapors may cause dizziness or asphyxiation without warning.
- 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.

10.2. Chemical stability

- Vapors may cause dizziness or asphyxiation without warning.
- 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.

10.3. Possibility of hazardous reactions

- Vapors may cause dizziness or asphyxiation without warning.
- 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.

10.4. Conditions to avoid

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

10.5. Incompatible materials

- Combustibles, reducing material.

10.6. Hazardous decomposition products

- Corrosive/toxic fume.
- Irritating, corrosive and/or toxic gas.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

- 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 (ACGHI)
- Germ cell mutagenicity
 - No data available
- Reproductive toxicity
 - No data available
- Specific target organ toxicity single exposure
 - EU-CLP Classifications (Category 3(Narcotic effects))
- Specific target organ toxicity repeated exposure
 - No data available
- Aspiration hazard
 - No data available

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

- Ethylene
- Not applicable

11.2.2. Other information

- Ethylene
- No other hazards have been identified

SECTION 12: Ecological information

12.1. Toxicity

- Fish
 - No data available
- Crustaceans
 - No data available
- Aquatic algae
 - No data available

12.2. Persistence and degradability

- Degradability
 - No data available
- Biodegradation
 - No data available

12.3. Bioaccumulative potential

- n-octanol water partition coefficient
1.13 log Kow
 - Bioconcentration factor(BCF)
4 ((Pimephales promelas(Fish, fresh water)))
- 12.4. Mobility in soil
No data available
- 12.5. Result of PBT and vPvB assessment
Not applicable
- 12.6. Endocrine disrupting properties
Not applicable
- 12.7. Other adverse effects
Not applicable

SECTION 13: Disposal considerations

13.1. Waste treatment methods

13.1.1. Product / Packaging disposal

- Empty containers should be taken to an approved waste handling site for recycling or disposal.
- Waste codes / waste designations according to LoW
 - No data available

13.1.2. Waste treatment-relevant information

- Disposal according to local regulations.

13.1.3. Sewage disposal-relevant information

- Disposal according to local regulations and avoid release to the environment.

13.1.4. Other disposal recommendations

- No data available

SECTION 14: Transport information

14.1. UN number or ID number : 1962

14.2. UN proper shipping name : ETHYLENE

14.3. Transport hazard class(es) : 2.1

14.4. Packing group : Not applicable

14.5. Environmental hazards : No

14.6. Special precautions for user :

Emergency measures in case of fire : F-D

Emergency measures in the effluent : S-U

14.7. Maritime transport in bulk according to IMO instruments :

Not applicable

- 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

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU regulations

- EU - REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances

- Not applicable

- EU - REACH (1907/2006) - Annex XIV - Substances Subject to Authorization

- Not applicable

15.1.2. Other EU regulations

- EU - Persistent Organic Pollutants (POPs) (2019/1021) - Annex III - Substances Subject to Release Reduction Provisions

- Not applicable

- EU - Persistent Organic Pollutants (POPs) (2019/1021) - Annex I - Substances Subject to Prohibitions

- Not applicable

- EU - Persistent Organic Pollutants (POPs) (2019/1021) - Annex IV - Waste Management - Concentration Limits

- Not applicable

- EU - Persistent Organic Pollutants (POPs) (2019/1021) - Annex V - Waste Management - Maximum Concentration Limits

- Not applicable

- EU - Paints, Varnishes, Vehicle Refinishing Products (2004/42/CE) - Annex II A - WB Phase 1 - VOCs

- Not applicable

- EU - Paints, Varnishes, Vehicle Refinishing Products (2004/42/CE) - Annex II A - WB Phase 2 - VOCs

- Not applicable

- EU - Paints, Varnishes, Vehicle Refinishing Products (2004/42/CE) - Annex II B - Vehicles - VOCs

- Not applicable
- EU - Paints, Varnishes, Vehicle Refinishing Products (2004/42/CE) - Annex II A - SB Phase 1 - VOCs
 - Not applicable
- EU - Paints, Varnishes, Vehicle Refinishing Products (2004/42/CE) - Annex II A - SB Phase 2 - VOCs
 - Not applicable
- EU - Seveso III Directive (2012/18/EU) - Qualifying Quantities of Dangerous Substances - Lower-Tier Requirements
 - Not applicable
- EU - Seveso III Directive (2012/18/EU) - Qualifying Quantities of Dangerous Substances - Higher-Tier Requirements
 - Not applicable
- EU - Export and Import Restrictions (649/2012) - Chemicals Subject to Export Notification Procedure
 - Not applicable
- EU - Export and Import Restrictions (649/2012) - Chemicals and Articles Subject to Export Ban
 - Not applicable
- EU - Export and Import Restrictions (649/2012) - Chemicals Subject to the PIC Procedure under the Rotterdam Convention
 - Not applicable
- EU - Export and Import Restrictions (649/2012) - Chemicals Qualifying for PIC Notification
 - Not applicable

15.2. Chemical safety assessment

- A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

16.1. Key literature references and sources for data

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

16.2. Issuing date : 26-12-2022

16.3. Indication of changes

- Revision number : 3-1
- Revision date : 01-06-2026

16.4. Abbreviations and acronyms

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

For explanation of abbreviations see section 16.

- This substance/mixture contain(s) only ingredients which have been registered, or are exempt from registration, according to Regulation (EC) No. 1907/2006 (REACH).

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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