

**Ethylene 99.8% Grade**

Version 1.2

Revision Date 2023-06-16

According to Regulation (EC) No. 1907/2006, Regulation (EC) No. 2020/878

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Product information**

Product Name : Ethylene 99.8% Grade  
Material : 1083870, 1085526, 1100705, 1015414

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

Relevant Identified Uses : Feedstock  
Supported

**1.3****Details of the supplier of the safety data sheet**

**Company** : Chevron Phillips Chemical Company LP  
10001 Six Pines Drive  
The Woodlands, TX 77380

**Local** : Chevron Phillips Chemicals International N.V.  
Airport Plaza (Stockholm Building)  
Leonardo Da Vincilaan 19  
1831 Diegem  
Belgium

SDS Requests: (800) 852-5530  
Responsible Party: Product Safety Group  
Email:sds@cpchem.com

**1.4****Emergency telephone:****Health:**

866.442.9628 (North America)  
1.832.813.4984 (International)

**Transport:**

CHEMTREC 800.424.9300 or 703.527.3887(int'l)  
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090  
Mexico CHEMTREC 01-800-681-9531 (24 hours)  
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600  
Argentina: +(54)-1159839431

**Ethylene 99.8% Grade**

Version 1.2

Revision Date 2023-06-16

EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)  
 Belgium: 070 245 245 (24 hours/day, 7 days/week)  
 Bulgaria: +359 2 9154 233  
 Croatia: +3851 2348 342 (24 hours/day, 7 days/week)  
 Cyprus: 1401  
 Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402  
 Denmark: Danish Poison Center (Gifftlinjen): +45 8212 1212  
 Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Finland: 0800 147 111 09 471 977 (24 hours/day)  
 France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)  
 Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Greece: (0030) 2107793777 (24 hours/day, 7 days/week)  
 Hungary: +36-80-201-199 (24 hours/day, 7 days/week)  
 Iceland: 543 2222 (24 hours/day, 7 days/week)  
 Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Italy: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic  
 Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371  
 67042473. (24 hours.)  
 Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Lithuania: +370 (85) 2362052  
 Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)  
 Malta: +356 2395 2000  
 The Netherlands: NVIC: +31 (0)88 755 8000  
 Norway: 22 59 13 00 (24 hours/day, 7 days/week)  
 Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Portugal: CIAV phone number: +351 800 250 250  
 Romania: +40213183606  
 Slovakia: +421 2 5477 4166  
 Slovenia: Phone number: 112  
 Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24  
 hours/day, 7 days/week)  
 Sweden: 112 – ask for Poisons Information

Responsible Department : Product Safety and Toxicology Group  
 E-mail address : SDS@CPChem.com  
 Website : www.CPChem.com

**SECTION 2: Hazards identification****2.1****Classification of the substance or mixture  
REGULATION (EC) No 1272/2008**




Flammable gases, Category 1A	H220: Extremely flammable gas.
Gases under pressure, Liquefied gas	H280: Contains gas under pressure; may explode if heated.
Specific target organ toxicity - single exposure, Category 3, Central nervous system	H336: May cause drowsiness or dizziness.

**2.2****Labeling (REGULATION (EC) No 1272/2008)**

**Ethylene 99.8% Grade**

Version 1.2

Revision Date 2023-06-16

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	:	<b>Prevention:</b> P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. <b>Response:</b> P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P381 In case of leakage, eliminate all ignition sources. <b>Storage:</b> P403 + P233 Store in a well-ventilated place. Keep container tightly closed. P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Hazardous ingredients which must be listed on the label:

- 74-85-1 Ethylene

**2.3****Other hazards**

Results of PBT and vPvB assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Endocrine disrupting properties	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**SECTION 3: Composition/information on ingredients****3.1 - 3.2****Substance or Mixture**

Synonyms	:	Ethylene HP (UNODORIZED) or ETHYLENE 99.8% GRADE Ethene Ethylene HP (Unodorized)
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**Ethylene 99.8% Grade**

Version 1.2

Revision Date 2023-06-16

Molecular formula : C<sub>2</sub>H<sub>4</sub>**Hazardous ingredients**

Chemical name	CAS-No. EC-No. Index No.	Classification (REGULATION (EC) No 1272/2008)	Concentration [wt%]	Specific Conc. Limits, M-factors and ATEs
Ethylene	74-85-1 200-815-3 601-010-00-3	Flam. Gas 1; H220 Press. Gas Compr. Gas; H280 Press. Gas Compr. Gas;; STOT SE 3; H336	99,8 - 100	

For the full text of the H-Statements mentioned in this Section, see Section 16.

**SECTION 4: First aid measures****4.1****Description of first-aid measures**

- General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance.
- If inhaled : Consult a physician after significant exposure. If unconscious, place in recovery position and seek medical advice.
- In case of eye contact : Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

**4.2 Most important symptoms and effects, both acute and delayed****Notes to physician**

Symptoms : No data available.

Risks : No data available.

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

Treatment : No data available.

**SECTION 5: Firefighting measures**Flash point : -136°C (-213°F)  
Method: closed cup

Autoignition temperature : 490°C (914°F)

**5.1****Extinguishing media**Suitable extinguishing media : Alcohol-resistant foam. Carbon dioxide (CO<sub>2</sub>). Dry chemical.

**Ethylene 99.8% Grade**

Version 1.2

Revision Date 2023-06-16

Unsuitable extinguishing media : High volume water jet.

**5.2****Special hazards arising from the substance or mixture**

Specific hazards during fire fighting : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**5.3****Advice for firefighters**

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.

Fire and explosion protection : Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

Hazardous decomposition products : Methane. Hydrogen.

**SECTION 6: Accidental release measures****6.1****Personal precautions, protective equipment and emergency procedures**

Personal precautions : Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

**6.2****Environmental precautions**

Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

**6.4****Reference to other sections**

Reference to other sections : For personal protection see section 8. For disposal considerations see section 13.

**SECTION 7: Handling and storage****7.1****Precautions for safe handling  
Handling**

Advice on safe handling : Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under

**Ethylene 99.8% Grade**

Version 1.2

Revision Date 2023-06-16

pressure. Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

**7.2****Conditions for safe storage, including any incompatibilities****Storage**

Requirements for storage areas and containers : Prevent unauthorized access. No smoking. Keep container tightly closed in a dry and well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

**SECTION 8: Exposure controls/personal protection****8.1****Control parameters  
Ingredients with workplace control parameters****SE**

Beståndsdelar	Grundval	Värde	Kontrollparametrar	Anmärkning
Ethylene	SE AFS	NGV	250 ppm, 330 mg/m <sup>3</sup>	
	SE AFS	KGV	1.000 ppm, 1.200 mg/m <sup>3</sup>	V.

V Vägledande kortidsgränsvärde ska användas som ett rekommenderat högsta värde som inte bör överskridas

**PT**

Componentes	Bases	Valor	Parâmetros de controlo	Nota
Ethylene	PT OEL	VLE-MP	200 ppm,	A4,

A4 Agente não classificável como carcinogénico no Homem.

**LV**

Sastāvdaļas	Bāze	Vērtība	Pārvaldības parametri	Piezīme
Ethylene	LV OEL	AER 8 st	100 mg/m <sup>3</sup>	

**LT**

Komponentai	Šaltinis	Vertė	Kontrolės parametrai	Pastaba
Ethylene	LT OEL	IPRD	100 mg/m <sup>3</sup>	

**IE**

Components	Basis	Value	Control parameters	Note
Ethylene	IE OEL	OELV - 8 hrs (TWA)	200 ppm,	Asphx,

Asphx Gaseous chemical substances which may not produce significant physiological effects in the exposed employee, but when present in high concentrations will act as simple asphyxiants

**FI**

Aineosat	Peruste	Arvo	Valvontaa koskevat muuttujat	Huomautus
Ethylene	FI OEL	HTP-arvot 8h	200 ppm,	Liite 4,

Liite 4 Happea syrjäyttämällä tukehduttavat kaasut

**ES**

Componentes	Base	Valor	Parámetros de control	Nota
Ethylene	ES VLA	VLA-ED	200 ppm,	

**CH**

Inhaltsstoffe	Grundlage	Wert	Zu überwachende Parameter	Bemerkung
Ethylene	CH SUVA	MAK-Wert	10.000 ppm, 11.500 mg/m <sup>3</sup>	M2, NIOSH,

**Ethylene 99.8% Grade**

Version 1.2

Revision Date 2023-06-16

M2 Stoffe, die für den Menschen bedenklich sind, weil sie möglicherweise vererbare Mutationen in Keimzellen von Menschen auslösen können  
 NIOSH National Institute for Occupational Safety and Health

**BE**

Bestanddelen	Basis	Waarde	Controleparameters	Opmerking
Ethylene	BE OEL	TGG 8 hr	200 ppm, 233 mg/m3	A,

A Deze stoffen geven gassen of dampen vrij die op zich geen fysiologische werking hebben, maar die het zuurstofgehalte in de lucht kunnen verlagen. Wanneer het zuurstofgehalte daalt onder de 17-18 % (vol/vol), veroorzaakt het zuurstoftekort verstikking, die zich manifesteert zonder dat er een waarschuwing aan voorafgaat.

**Biological exposure indices****SK**

Názov látky	Č. CAS	Kontrolné parametre	Doba odberu vzorky	Aktualizácia
Ethylene	74-85-1	hydroxyetylvalín: 180 µg/l koniec vystavenia, resp. koniec pracovnej zmeny (červené krvinky)	žiadne obmedzenie	2011-11-23
		hydroxyetylvalín: 1.12 µmol.l-1 koniec vystavenia, resp. koniec pracovnej zmeny (červené krvinky)	žiadne obmedzenie	2011-11-23

**8.2****Exposure controls  
Engineering measures**

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

**Personal protective equipment**

Respiratory protection : If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate. If exposure to harmful levels of airborne material may occur, a NIOSH approved respirator that provides protection may be appropriate, such as: Air-Purifying Respirator for Organic Vapors, Dusts and Mists. A positive pressure, air-supplying respirator may be appropriate if there is potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Eye protection : Eye wash bottle with pure water. Safety glasses.

Skin and body protection : Choose body protection in relation to its type, to the

**Ethylene 99.8% Grade**

Version 1.2

Revision Date 2023-06-16

concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Flame retardant antistatic protective clothing. Workers should wear antistatic footwear.

Hygiene measures : Wash hands before breaks and at the end of workday.

**SECTION 9: Physical and chemical properties****9.1****Information on basic physical and chemical properties****Appearance**

Form : Liquefied gas  
 Physical state : Gaseous  
 Color : Colorless  
 Odor : Sweet Olefinic  
 Odor Threshold : 270 ppm

**Safety data**

Flash point : -136°C (-213°F)  
 Method: closed cup

Lower explosion limit : 2,7 %(V)

Upper explosion limit : 36 %(V)

Autoignition temperature : 490°C (914°F)

Molecular formula : C<sub>2</sub>H<sub>4</sub>

Molecular weight : 28,04 g/mol

pH : Not applicable

Freezing point : -169°C (-272°F)

Boiling point/boiling range : -103,9°C (-155,0°F)

Vapor pressure : 51,00 bar  
 at 10°C (50°F)

Relative density : 0,57  
 at -103,9 °C (-155,0 °F)

Water solubility : 130 mg/l

Solubility in other solvents : Soluble in hydrocarbons

Viscosity, kinematic : Not applicable

Relative vapor density : 0,98  
 (Air = 1.0)

Evaporation rate : No data available



**Ethylene 99.8% Grade**

Version 1.2

Revision Date 2023-06-16

Percent volatile : &gt; 99 %

**SECTION 10: Stability and reactivity****10.1****Reactivity** : Stable under recommended storage conditions.**10.2****Chemical stability** : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.**10.3****Possibility of hazardous reactions****Hazardous reactions** : Hazardous reactions: Hazardous polymerization does not occur.

Hazardous reactions: Vapors may form explosive mixture with air.

**10.4****Conditions to avoid** : Heat, flames and sparks.**10.5****Materials to avoid** : May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.**10.6****Hazardous decomposition products** : Methane  
Hydrogen**Other data** : No decomposition if stored and applied as directed.**SECTION 11: Toxicological information****11.1****Information on toxicological effects****Ethylene 99.8% Grade****Acute oral toxicity** : Negligible or unlikely exposure pathways**Acute inhalation toxicity**Ethylene : LC50: > 65,4 mg/l  
Exposure time: 4 h  
Species: Rat  
Sex: male  
Test atmosphere: gas**Ethylene 99.8% Grade**

**Ethylene 99.8% Grade**

Version 1.2

Revision Date 2023-06-16

- Acute dermal toxicity** : Negligible or unlikely exposure pathways
- Skin irritation**
- Ethylene : Contact with liquid or refrigerated gas can cause cold burns and frostbite.
- Eye irritation**
- Ethylene : Contact with liquid or refrigerated gas can cause cold burns and frostbite.
- Genotoxicity in vitro**
- Ethylene : Test Type: Ames test  
Test system: TA100  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative
- Test Type: Chromosome aberration test in vitro  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: negative
- Genotoxicity in vivo**
- Ethylene : Test Type: Micronucleus test  
Species: Rat  
Route of Application: inhalation (gas)  
Exposure time: 5 days and 13 weeks  
Dose: 10000 ppm  
Result: negative
- Test Type: Micronucleus test  
Species: Rat  
Route of Application: inhalation (gas)  
Exposure time: 4 weeks  
Dose: 40, 1000, 3000 ppm  
Method: OECD Test Guideline 474  
Result: negative
- Carcinogenicity**
- Ethylene : Species: Rat  
Dose: 0. 300, 1000, 3000 ppm  
Exposure time: 2 yrs  
Number of exposures: 6 h/d, 5 d/wk  
Remarks: no increase incidence of tumors
- Reproductive toxicity**
- Ethylene : Species: Rat  
Application Route: Inhalation  
Dose: 0. 200, 1000, 5000 ppm  
Number of exposures: 6 h/d  
NOAEL Parent: 5000 ppm  
NOAEL F1: 5000 ppm

**Ethylene 99.8% Grade**

Version 1.2

Revision Date 2023-06-16

no abnormalities observed

**Developmental Toxicity**

Ethylene : Species: Rat  
 Application Route: Inhalation  
 Dose: 0, 200, 1000, 5000 ppm  
 Number of exposures: 6 h/d  
 NOAEL Teratogenicity: 5000 ppm  
 NOAEL Maternal: 5000 ppm  
 No toxicity to reproduction  
 Animal testing did not show any effects on fertility.

**Ethylene 99.8% Grade**

**Aspiration toxicity** : No aspiration toxicity classification.

**Specific Target Organ Toxicity (Single Exposure)**

Ethylene : Assessment: May cause drowsiness or dizziness.

**11.2****Information on other hazards****Ethylene 99.8% Grade**

**Further information** : Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Concentrations substantially above the TLV value may cause narcotic effects. Solvents may degrease the skin.

Endocrine disrupting properties : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**SECTION 12: Ecological information****12.1****Toxicity****Ecotoxicity effects**

**Toxicity to fish** : This material is not expected to be harmful to aquatic organisms.

**12.2****Persistence and degradability**

## Biodegradability

Ethylene : This material is expected to be readily biodegradable.

**12.3****Bioaccumulative potential**

Elimination information (persistence and degradability)

## Bioaccumulation

**Ethylene 99.8% Grade**

Version 1.2

Revision Date 2023-06-16

Ethylene : Bioaccumulation is unlikely.

**12.4****Mobility in soil**

Mobility : No data available

**12.5****Results of PBT and vPvB assessment**

Results of PBT assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**12.6****Endocrine disrupting properties**

Endocrine disrupting properties : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**12.7****Other adverse effects**

Additional ecological information : No data available

**12.8****Additional Information****Ecotoxicology Assessment**

Short-term (acute) aquatic hazard : This material is not expected to be harmful to aquatic organisms.

Long-term (chronic) aquatic hazard : This material is not expected to be harmful to aquatic organisms.

**SECTION 13: Disposal considerations****13.1****Waste treatment methods**

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product : Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product.

**Ethylene 99.8% Grade**

Version 1.2

Revision Date 2023-06-16

Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

**SECTION 14: Transport information****14.1 - 14.7****Transport information**

**The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).**

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

**US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)**

UN1962, ETHYLENE, 2.1

**IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)**

UN1962, ETHYLENE, 2.1, (-136 °C c.c.)

**IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)**

UN1962, ETHYLENE, 2.1

**ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))**

UN1962, ETHYLENE, 2.1, (B/D)

**RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))**

23, UN1962, ETHYLENE, 2.1 ((13))

**ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)**

UN1962, ETHYLENE, 2.1

**Maritime transport in bulk according to IMO instruments**

**SECTION 15: Regulatory information****15.1****Safety, health and environmental regulations/legislation specific for the substance or mixture  
National legislation**

Commission Regulation (EU) 2020/878 of 18 June 2020 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

**Ethylene 99.8% Grade**

Version 1.2

Revision Date 2023-06-16

**15.2**

**Major Accident Hazard Legislation** : 96/82/EC Update: 2003  
Extremely flammable  
8  
Quantity 1: 10 t  
Quantity 2: 50 t

: ZEU\_SEVES3 Update:  
FLAMMABLE GASES  
P2  
Quantity 1: 10 t  
Quantity 2: 50 t

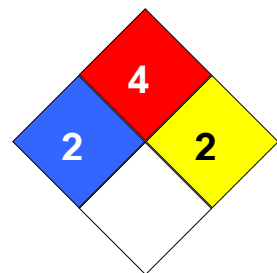
**Notification status**

Europe REACH : Not in compliance with the inventory  
Switzerland CH INV : On the inventory, or in compliance with the inventory  
United States of America (USA) : On or in compliance with the active portion of the  
TSCA : TSCA inventory  
Canada DSL : All components of this product are on the Canadian  
DSL  
Australia AIIC : On the inventory, or in compliance with the inventory  
Japan ENCS : On the inventory, or in compliance with the inventory  
Korea KECI : A substance(s) in this product was not registered,  
notified to be registered, or exempted from registration  
by CPChem according to K-REACH regulations.  
Importation or manufacture of this product is still  
permitted provided the Korean Importer of Record has  
themselves notified the substance or the exported  
amount does not exceed the minimum threshold  
quantity of the non-registered substance(s).

Philippines PICCS : On the inventory, or in compliance with the inventory  
Taiwan TCSI : On the inventory, or in compliance with the inventory  
China IECSC : On the inventory, or in compliance with the inventory

**SECTION 16: Other information**

**NFPA Classification** : Health Hazard: 2  
Fire Hazard: 4  
Reactivity Hazard: 2

**Further information**

Legacy SDS Number : 1852

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

**Ethylene 99.8% Grade**

Version 1.2

Revision Date 2023-06-16

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.

**Key or legend to abbreviations and acronyms used in the safety data sheet**

ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AIIC	Australian Inventory of Industrial Chemicals	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%	ATE	Acute toxicity estimate

**Full text of H-Statements referred to under sections 2 and 3.**

H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.
H336	May cause drowsiness or dizziness.