

PRESSURE AND TEMPERATURE REGULATOR

SECTION 1: Product and company identification

1. Product identifier
Tradename : Ethyl chloride
Chemical Description : Chloroethane: 75-00-3; 200-830-5; 602-009-00-0
Registry number : The registration application deadline has not expired.
Chemical formula : C₂H₅Cl




2. Relevant identified uses of the substance or mixture and uses advised against
Applicable identified uses : Industrial and professional. Carry out risk assessment before use. Test gas / calibration gas. Laboratory use.
 Chemical Reaction (Synthesis) For more information on its use, contact the supplier.

1.3. Details of the supplier of the safety data sheet.
Company Identification : PRAXAIR ESPAÑA, S.L.U.
 Orense, 11 - 59 Planta
 28020 Madrid
Email address (competent person). : contact_espana@praxair.com

1.4. Emergency number
Telephone (competent person). : (+34)914533000
Emergency telephone number in Liquid : (+34)915974453
Transportation (24 h).
Emergency telephone number in Facilities (24 h). : (+34)902213000
Emergency telephone number in Special Gases (24 h). : (+34)917863432

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture.
Risk class and category, CE :
Regulation Code 1272/2008 (CLP)
Physical hazards : Flammable gases - Category 1 - Danger - (CLP: Flam. Gas 1) - H220 Gases under pressure - Liquefied gases - Warning - (CLP: Press. Gas) - H280
 • **Health hazards** : Carcinogenicity - Category 2 - Warning - (CLP: Carc. 2) - H35
 • **Hazards to the environment** : Hazardous to the aquatic environment - Chronic Hazard - Category 3 - (CLP: Aquatic Chronic 3) - H412
Classification EC 67/548 or 1999/45: EC
Classification CE : F+; R12 Carc. Cat. 3; R40 R52/53

2.2. Label elements CE
Labeling Regulation 1272/2008 (CLP)
Hazard pictograms :



 GHS02 GHS08 GHS04

• **Word of signal** : Danger
 • **Hazard statement** : H220: Extremely flammable gas.
 H280: Contains gas under pressure; Risk of explosion if heated.
 H351: Suspected of causing cancer.
 H412: Harmful to aquatic life with long lasting effects.

• **Prudent advice-Prevention**
 P210: Keep away from heat / sparks / open flames / hot surfaces. - No Smoking.
 P202: Do not handle the substance before having read and understood all the safety instructions.
 P273: Avoid release to the environment.

- **Response**
 P308 + P313: IF exposed or presumed: Consult a doctor.
 P377: Leak of gas on fire: Do not extinguish, unless leak can be stopped safely.
 P381: Eliminate all sources of ignition if safe to do so.
 P403: Store in a well-ventilated place.

- **Storage**
2.3. Other hazards : None.
General information

SECTION 3: Composition / information on ingredients

3.1. Sustancia / Mezcla : Substance.
Component name : Chloroethane
Content : 100 %
Nº CAS : 75-00-3
Nº EC : 200-830-5
Nº Index : 602-009-00-0

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Reach No. : Note2
Classification : F +; R12 Carc. Cat. 3; R40 R52-53Flam. Gas 1 (H220) Carc. 2 (H351) Press. Gas Liquefied (H280) Aquatic Chronic 3 (H412): Does not contain other components or impurities that could influence the classification of the product. Full text of R-phrases, see chapter 16.
General information : Full text of H-statements, see chapter 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

- Inhalation : Remove the victim to an uncontaminated area wearing self-contained breathing apparatus. Keep the victim warm and at rest. Call the doctor. Apply artificial respiration if breathing is stopped.
- Skin contact : In case of liquid splashes. Wash with water for at least 15 minutes.
- Eye contact : No adverse effects are expected from this product.
- Ingestion : Ingestion is not considered a potential route of exposure.
4.2 Main symptoms and effects, acute and delayed : At high concentrations it can cause suffocation. Symptoms can include loss of consciousness or mobility. The victim may not have realized the suffocation.
General information : At low concentrations it can have narcotic effects. Symptoms can include dizziness, headache, nausea, and loss of coordination.

4.3 Indication of any immediate medical attention and special treatment needed

General information : None.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray or nebulizer. Dry powder.
- Unsuitable extinguishing media : Do not use pressurized water to extinguish it. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Specific hazards : Exposure to fire may cause containers to rupture or explode.
Hazardous combustion products : If involved in a fire, the following corrosive and / or toxic fumes can be produced by thermal decomposition: Carbon monoxide. Phosgene. Hydrogen chloride.

5.3. Advice for firefighters

Specific methods : If possible, stop product leakage.
 Use fire control measures appropriate to the surrounding fire. Exposure of gas containers to fire and heat can cause them to rupture. Cool damaged containers with a jet of water spray from a protected position. Do not empty fire contaminated water into drains.
 Do not extinguish an ignited gas leak unless absolutely necessary. Explosive spontaneous reignition may occur. Extinguish the other fires.
 Use water spray or mist to dispel fire fumes.

Special protective equipment for apparatus. : In confined spaces use positive pressure self-contained breathing

Firefighting : Standard protective clothing and equipment (autonomous breathing apparatus) for firefighters. Standard EN 137-full face mask that includes an autonomous breathing apparatus of compressed air in open circuit. EN 469: Protective clothing for firefighters EN 659: Protective gloves for firefighters.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General information : : Attempt to stop the leak / spill. Evacuate the area.
 Take into account the risk of explosive atmospheres. Monitor the concentration of product released.
 Wear self-contained breathing apparatus when entering the area unless the atmosphere has been proven to be safe.
 Ensure proper air ventilation.
 Eliminate sources of ignition.
 Prevent entry into sewers, basements, work pits, or anywhere else where build-up can be dangerous..

2. Environmental precautions

General information : Attempt to stop the leak / spill.
Methods and material for containment and cleaning up

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General information 6.4. : Ventilate the area.
Reference to other sections
General information : See also Sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Safe use of the product

: Only experienced and properly trained persons should handle gases under pressure.
 The substance must be handled in accordance with good industrial hygiene and safety procedures.
 Use only equipment specifically appropriate for this product and for its supply pressure and temperature, if in doubt contact your supplier.
 Avoid exposure, obtain special instructions before use. Take precautionary measures against electrostatic discharge.
 Bleed air from system before introducing gas.
 Keep away from sources of ignition, including static discharge. Do not smoke when handling the product.
 Take into account the risk of a possible atmosphere liable to explode and the need to have a team to test the explosion.
 Consider using non-sparking tools.
 Check that the entire gas system has been, or is regularly, checked before use regarding the possibility of leaks.
 Avoid the return of water, acids and bases.
 Consider pressure reduction instruments in gas installations.

Safe handling of the gas container

: Request from the supplier the instructions for handling the containers. Do not allow recoil to the inside of the container.
 Protect the bottles from material damage, do not drag, roll, slide or drop.
 If you move bottles, even on short distances, use a wheelbarrow (mechanical, manual, etc.) designed to transport bottles.
 Keep the valve cap in place until the container is fixed against a wall, a bench or placed on a platform, and ready for use. If the user appreciates any problem in a valve of a bottle in use, terminate its use and contact the supplier.
 Never try to repair or modify tank valves or safety mechanisms. Valves that are damaged must be immediately reported to the supplier.
 Keep the tank valve accessories free of contaminants, especially oils and water.
 Replace the cap of the valve or the tank if provided by the supplier, provided that the container is disconnected from the equipment.
 Close the tank valve after use and when it is empty, even if it is still connected to the equipment. Never try to transfer gases from one bottle / container to another.
 Never use mechanisms with flames or electric heating to increase the pressure of the tank.
 Do not remove or deface the labels provided by the supplier to identify the contents of the bottles.

7.2. Conditions for safe storage, including any incompatibilities
General information

: Keep the container below 50 ° C, in a well-ventilated place.
 Observe all local regulations and requirements regarding container storage. Separates from oxidizing gases or other oxidizing materials during storage.
 Containers must be stored in an upright position and properly secured to prevent them from falling.
 The stored containers must be periodically checked regarding their general condition and possible leaks.
 The valve guards and caps must be in place.
 Store containers in a hazard-free place and away from sources of heat and ignition.
 All electrical equipment in storage areas must be compatible with the risk of a possible explosive atmosphere.
 Containers should not be stored in conditions that favor corrosion. Keep away from combustible materials.

7.3. Specific end uses
General information

: None.

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Occupational exposure limits

: Chloroethane: VLA-ED Spain [ppm]: 100 Chloroethane: VLA-ED Spain [mg / m³]

DNEL Level without derivative effects (workers)

: 268: Chloroethane: Long-term inhalation (systemic) (mg / m³) for DNEL: 268
 Chloroethane: Dermal-long-term (systemic) (mg / kg bw d) for DNEL: 38.3

PNEC Predicted No Effect Concentration

: Chloroethane: PNEC Water (tap water) (mg / l): 0.058
 Chloroethane: PNEC Water (sea water) (mg / l): 0.0058
 Chloroethane: PNEC Aquatic, intermittent emissions (mg / l): 0.58
 Chloroethane: PNEC Sediments, tap water (mg / kg dw): 0.3098
 Chloroethane: PNEC Sediments, sea water (mg / kg dw): 0.031
 Chloroethane: PNEC Microorganisms or PNEC sewage treatment plant (STP) (mg / l): 140
 Chloroethane: Soil, agricultural (mg / kg dw): 28.3

8.2. Exposure controls

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Appropriate engineering controls	<p>: Product that must be handled in the context of a closed system and under strict control conditions. Keep the concentration below the concentration limits allowed for professionals.</p> <p>Gas detectors should be used whenever flammable gases / vapors can be emitted. Consider a work permit system eg for maintenance work.</p> <p>Use preferably only in permanently sealed installations (eg welded pipes) Systems subject to pressure should be regularly checked for leaks.</p> <p>Provide adequate general and local ventilation to exhaust gases.</p>
Personal protection equipment	<p>: A risk analysis must be carried out and formalized in each work area to evaluate the risks related to the use of the product and to determine the PPE that causes a relevant risk. These recommendations must be taken into account. PPE meeting the standards recommended by EN / ISO should be selected.</p>
• Eye / face protection	<p>: wear safety glasses with side shields.</p> <p>Wear safety glasses with side shields or goggles over the eyes when transferring or disconnecting.</p> <p>Standard EN 166- Eye protection.</p>
• Skin protection	<p>: Wear work gloves when handling gas containers.</p>
• - Hand protection	<p>Standard EN 388- gloves that protect against mechanical risks. Wear chemical resistant gloves.</p> <p>Standard EN 388- gloves that protect against chemical products.</p> <p>The expected breakdown time for the selected glove must be greater than the intended wear time. Consult the glove manufacturer's information on the product regarding the suitability of the material and its thickness.</p> <p>Goma de Butyl (IIR) /</p>
- Others	<p>: Wear safety shoes while handling containers.</p> <p>Consider the use of anti-static flame resistant safety garments.</p> <p>Standard EN ISO 20345 - Personal protective equipment-safety shoes.</p> <p>Standard EN ISO 14116- Materials that limit the spread of flames.</p> <p>Standard EN ISO 1149-5- Protective clothing: Electrostatic properties..</p>
• Respiratory protection	<p>: Gas filters can be used if all the existing conditions, such as type, concentration of the pollutant (s) and time of use, are all known.</p> <p>Use gas filters and masks that cover the entire face, in case of exceeding the exposure limits for a short period of time, eg. When connecting or disconnecting containers.</p> <p>Recommended filter AX (brown). For the selection of the appropriate equipment, consult the product information prepared by the manufacturer of the respirator.</p> <p>Standard EN 14387-gas filter (s), combination filter (s) and full face masks-EN 136. Gas filters do not protect against oxygen insufficiency.</p> <p>Have a self-contained breathing apparatus for use in an emergency.</p> <p>Standard EN 137-full face mask that includes an autonomous breathing apparatus of compressed air in open circuit.</p> <p>An autonomous breathing system is recommended, in case there may be exposure to something unknown, eg. When performing maintenance operations on facilities.</p>
• Thermal hazards	<p>: Not necessary.</p>
Environmental exposure controls	<p>: Take into account local regulations regarding restrictions on emissions into the atmosphere. See section 13 for specific waste gas treatment methods.</p>

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	: Gas.
Physical state at 20 ° C / 101.3kPa ColorSmell	: Gas. : : Colorless. : Ethereal.
Olfactory threshold	No odor in small concentrations.
PH value	: Exceeding limits due to odor is subjective and inadequate to warn of the risk of overload.
Molecular mass [g / mol]	: Does not apply..
Melting point [° C]	: 64.5
Boiling point [° C]	: -138
Critical temperature [° C]	: 12.3
Flash point [° C]:	: 187
Evaporation rate (ether = 1):	Not applicable to gases or gas mixtures.
Flammability range [% of: volume in air]	Not applicable to gases or gas mixtures.
Vapor pressure [20 ° C]:	3.6 - 14.8
Relative density of gas (air = 1):	1.3 bar
Relative density of liquid: (water = 1)	2.2
Solubility in water [mg / l]	0.91
Partition coefficient n-octanol / water [log Kow]	: No reliable data available.
Auto-ignition temperature: 510[° C]	: 1.43

Viscosity at 20 ° C [mPa.s]	: Does not apply.
Explosive properties	: Does not apply.
Oxidizing properties	: None.
9.2 Additional information	
Other information	: Vapor is heavier than air. It can accumulate in confined spaces, particularly at ground level or in basements.

SECTION 10: Stability and reactivity

1.Reactivity General Information	: No risk of reactivity except as expressed in the subsection below.
2.Chemical stability General information	: Stable under normal conditions.
3.Possibility of hazardous reactions	
General information	: Can form explosive mixes with the air.May react violently with oxidizing materials,
4.Conditions to avoid	
General information	: Keep away from heat / sparks / open flames / hot surfaces. - No Smoking.
5. Incompatible materials	
General information	: Air, Oxidizer.May react with aluminum.For additional information on its compatibility refer to ISO 11114.
10.6. Hazardous decomposition products	
General information	: Products with a risk of decomposition should not be produced under normal conditions of storage and use.

SECTION 11: Toxicological information

11.1. Information on toxicological effects	
Acute toxicity	: No data available.
Skin corrosion / irritation	: The effects of this product are unknown.Serious eye
Damage / irritation	: The effects of this product are unknown.
Respiratory or skin sensitization	: The effects of this product are unknown.
Carcinogenesis Mutagenicity	: May have carcinogenic effect.
Reproductive toxicity	: The effects of this product are unknown.
Specific target organ toxicity (STOT) - single exposure	: The effects of this product are unknown.
	: Overexposure can cause stomach cramps, vomiting and coughing and can also cause liver and kidney damage.
Specific target organ toxicity (STOT) - repeated exposure	: The effects of this product are unknown.
Aspiration hazard	: Not applicable to gases or gas mixtures.

SECTION 12: Ecological information

1.Toxicity General information	
EC50 48 Hours - Daphnia magna [mg / l]	: H412 : Harmful to aquatic life with long lasting effects. : 58
EC50 72h Algae [mg / l]	: 118
LC50-96 Hours in fish [mg / l]	: 117
2.Persistence and degradability	
General information	
3.Bioaccumulative potential	
General information	: It is not readily biodegradable. : Not susceptible to bioaccumulation due to low log Kow (log Kow <4) Refer to section 9.
4.Mobility in soil	
General information	:Due to its high volatility, the product is difficult to cause pollution to the soil or water.,
5.Results of PBT and vPvB assessment	
General information	: Not classified as PBT or vPvB.
6.Other adverse effects	
General information	: : None.
Effects on the ozone layer	: The effects of this product are unknow.
Produces effects on global warming	

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

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General information

: Need not to be discharged into the atmosphere.
 Refer to the EIGA Code of Practice Doc 30/10 Gas Removal accessible at <http://www.eiga.org> for more information on proper disposal methods.
 Toxic and corrosive gases formed during combustion must be scrubbed before being discharged into the atmosphere.
 Make sure not to exceed the emission limits established in local regulations.

List of hazardous waste
13.2 Additional information
General information

: 14 06 01
 : Chlorofluorocarbons, HCFC, HFC.
 : None..

SECTION 14: Transport information

1. UN number UN number

: 2037

2. UN proper shipping name Proper name

: VALVES & PARTS

3. Transport hazard class
(es) Transport hazard class (es)


2.1: Flammable gases

14.4. Packing group
Classification code

: 2
 F

14.5. Pollution hazards
Environmental hazards IMDG-Marine pollutant

: None.
 : No

14.6 Special precautions for users
General information

: Avoid transport in vehicles where the cargo space is not separated from the driver's compartment. Make sure the driver is aware of the potential hazards of the load and knows what to do in the event of an accident or emergency.
 Before transporting the bottles:
 Ensure adequate ventilation.
 Make sure the containers are secure.
 Make sure the cylinder valves are closed and do not leak.
 Make sure the valve coupling plug (if present) is properly tightened.
 Make sure that the valve cap or tulip, (where present), is properly tightened.

14.7. Bulk transport according to annex II of the MARPOL 73/78 treaty and according to IBC code
General information

: Does not apply.

SECTION 15: Regulatory information

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

:

Restrictions

: None.

Seveso directive 96/82 / EC

:

National Legislation General information

: Make sure national and local regulations are followed.

15.2 Chemical safety
assessment

: This product is either exempt from REACH because it does not exceed the minimum volume limits required by a CSR, or a CSA has not been developed.

SECTION 16: Other information

List of changes Advice related to training Labeling EC 67/548 or EC 1999/45

: Safety data sheet revised in accordance with Commission regulation (EU) No. 453/2010.
 : Make sure that the operators are aware of the flammability risk.;



F +: Extremely flammable
 Xn: Harmful

• R phrase (s)

: R12: Extremely flammable.
R40: Possible Carcinogenic Effects - Insufficient evidence.
R52 / 53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
: S9: Keep container in a well-ventilated place.

• R phrase (s)

S16: Keep away from sources of ignition - No smoking.
S33: Avoid the accumulation of electrostatic charges.
S36 / 37: Wear suitable protective clothing and gloves.

List of the full text of R-Phrases in section 3

S61: Avoid release to the environment. Obtain specific instructions from the safety data sheet.:
R12: Extremely flammable. R40: Possible Carcinogenic Effects - Insufficient evidence. R52 / 53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Origin of information
Notes**

: This Safety Data Sheet is established in accordance with the European Directives in force.
: Note 1:It is listed in Annex IV / V of REACH, exempt from application for registration.
Note 2:The registration application deadline has not expired. Note 3:It does not require registration.
Manufactured or imported substances <1t / y.

Other warnings

: Although special care has been taken in the preparation of this document, no liability is accepted for injury or consequential damage.

Details given are true and correct at the time this document goes to print.

Before using the product in a new process or experiment, a complete safety and material compatibility study should be carried out.: These instructions have been prepared by Praxair on the basis of the information available at the date of the instructions and cover the most common applications, without guaranteeing that their content is sufficient in all cases and situations. Its observance does not exclude compliance with the regulations in force at all times.

Responsibilities**Description of changes**

:Adaptation to current regulations.

End of document