

Product : **Ethylene (Refrigerated liquid)**
MSDS Nr : 302-00-0022BOC(A) Version : 1.01

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Date : 24/06/2010

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name Ethylene (Refrigerated liquid)
Chemical formula C₂H₄
Company identification see heading and/or footer
Emergency phone numbers see heading and/or footer

2 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation Substance.
Components/Impurities Contains no other components or impurities which will influence the classification of the product.
CAS Nr 74-85-1
EC Nr (from EINECS) 200-815-3

3 HAZARDS IDENTIFICATION

Hazards identification Extremely flammable
Vapours may cause drowsiness and dizziness.
Refrigerated liquefied gas. Contact with product may cause cold burns or frostbite.

4 FIRST AID MEASURES

Inhalation In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation.
In high concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.
Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
Skin/eye contact Immediately flush eyes thoroughly with water for at least 15 minutes.
In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing.
Obtain medical assistance
Ingestion Ingestion is not considered a potential route of exposure.

5 FIRE FIGHTING MEASURES

Specific hazards Exposure to fire may cause containers to rupture/explode.
Hazardous combustion products Incomplete combustion may form carbon monoxide.
Suitable extinguishing media All known extinguishants can be used.
Specific methods If possible, stop flow of product.
Move away from the container and cool with water from a protected position.
Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.
Special protective equipment for fire fighters Use self-contained breathing apparatus.

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6 ACCIDENTAL RELEASE MEASURES

Personal precautions	Evacuate area. Ensure adequate air ventilation. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Eliminate ignition sources.
Environmental precautions	Try to stop release. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
Clean up methods	Ventilate area. Keep area evacuated and free from ignition sources until any spilled liquid has evaporated. (Ground free from frost).

7 HANDLING AND STORAGE

Handling and storage	Ensure equipment is adequately earthed. Suck back of water into the container must be prevented. Purge air from system before introducing gas. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Keep away from ignition sources (including static discharges). Segregate from oxidant gases and other oxidants in store. Refer to supplier's container handling instructions. Keep container below 50°C in a well ventilated place.
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8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protection	Ensure adequate ventilation. Protect eyes, face and skin from liquid splashes. Do not smoke while handling product.
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9 PHYSICAL AND CHEMICAL PROPERTIES

Molecular weight	28
Melting point	-169 °C
Boiling point	-103 °C
Critical temperature	9.5 °C
Relative density, gas	1 (air=1)
Relative density, liquid	0.57 (water=1)
Vapour Pressure 20°C	Not applicable.
Solubility mg/l water	No reliable data available.
Appearance/Colour	Colourless liquid

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Odour Sweetish
Poor warning properties at low concentrations.
Flammability range 2.7-34 vol% in air.
Autoignition temperature 425 °C
Other data Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

10 STABILITY AND REACTIVITY

Stability and reactivity Can form explosive mixture with air.
May decompose violently at high temperature and/or pressure or in the presence of a catalyst
May react violently with oxidants.
Liquid spillages can cause embrittlement of structural materials.

11 TOXICOLOGICAL INFORMATION

General No known toxicological effects from this product.

12 ECOLOGICAL INFORMATION

General Can cause frost damage to vegetation.

13 DISPOSAL CONSIDERATIONS

General Do not discharge into areas where there is a risk of forming an explosive mixture with air.
Waste gas should be flared through a suitable burner with flash back arrestor.
Do not discharge into any place where its accumulation could be dangerous.
Contact supplier if guidance is required.

14 TRANSPORT INFORMATION

Proper shipping name ETHYLENE, REFRIGERATED LIQUID
UN Nr 1038
Class 2
ADR/RID Classification code 3F
ADR/RID Hazard Nr 223
Packing group None
Labelling ADR Label 2.1: flammable gas
IMDG EmS codes F-D, S-U
IMDG Marine pollutant No
IATA passenger packing instruction Forbidden
IATA passenger max. quantity/pack Forbidden
IATA cargo packing instruction Forbidden
IATA cargo max. quantity/pack Forbidden
Other transport information Avoid transport on vehicles where the load space is not separated from the driver's compartment.

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Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.

Before transporting product containers ensure that they are firmly secured and:

- there is adequate ventilation.
- compliance with applicable regulations.

15 REGULATORY INFORMATION

Number in Annex I of Dir 67/548	601-010-00-3.
EC Classification	F+;R12 R67
-Symbols	F+: Extremely flammable
Labelling of cylinders	
-Symbols	Label 2.1: flammable gas
-Risk phrases	R12 Extremely flammable. R67 Vapours may cause drowsiness and dizziness.
-Safety phrases	S9 Keep container in well ventilated place. S16 Keep away from ignition sources - No smoking. S33 Take precautionary measures against static discharges. S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16 OTHER INFORMATION

Ensure all national/local regulations are observed.

Ensure operators understand the flammability hazard.

Contact with liquid may cause cold burns/frost bite.

The hazard of asphyxiation is often overlooked and must be stressed during operator training.

Users of breathing apparatus must be trained.

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws.

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