



## **MATERIAL SAFETY DATA SHEET**

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### **1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY**

Product name	Ethylene
Chemical formula	C <sub>2</sub> H <sub>4</sub>
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 Compressed gas
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### **4. FIRST AID MEASURES**

Inhalation	In high concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination. In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
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.

## 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Evacuate area. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation. Eliminate ignition sources.
Environmental precautions	Try to stop release.
Clean up methods	Ventilate area.

## 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. 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	Not applicable.
Vapour Pressure 20°C	Not applicable.
Solubility mg/l water	No reliable data available.
Appearance/Colour	Colourless gas
Odour	Sweetish Poor warning properties at low concentrations.
Flammability range	2.7-34 vol% in air.
Autoignition temperature	425 °C

## 10. STABILITY AND REACTIVITY

Stability and reactivity	Can form explosive mixture with air. May react violently with oxidants. May decompose violently at high temperature and/or pressure or in the presence of a catalyst
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## 11. TOXICOLOGICAL INFORMATION

General	No known toxicological effects from this product.
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## 12. ECOLOGICAL INFORMATION

General	No known ecological damage caused by this product.
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### 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  
UN Nr 1962  
Class 2  
ADR/RID Classification code 2F  
ADR/RID Hazard Nr 23  
Labelling ADR Label 2.1: flammable gas  
Other transport information Avoid transport on vehicles where the load space is not separated from the driver's compartment.  
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:  
⌘ cylinder valve is closed and not leaking  
⌘ valve outlet cap nut or plug (where provided) is correctly fitted  
⌘ valve protection device (where provided) is correctly fitted  
⌘ 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  
Symbols F+: Extremely flammable  
Labelling of cylinders  
-Symbols Label 2.1: flammable gas  
-Risk phrases R12 Extremely flammable.  
-Safety phrases S9 Keep container in well ventilated place.  
S16 Keep away from ignition sources - No smoking.  
S33 Take precautionary measures against static discharges.

### 16. OTHER INFORMATION

Ensure all national/local regulations are observed.  
Ensure operators understand the flammability hazard.  
The hazard of asphyxiation is often overlooked and must be stressed during operator training.  
Users of breathing apparatus must be trained.

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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.

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.