



# Material Safety Data Sheet

## 1. Product and Company Identification

Product name : **Ethylene**

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

Synonyms : Acetene; Ethene; Ethylene, Compressed Gas; Olefiant Gas; Bicarburetted Hydrogen; UN 1962

Company : Med Tech Gases, Inc.  
20 Hall Street  
Medford, MA 02155

Telephone : 800-FINE-GAS

Emergency : 800-424-9300

## 2. Composition/Information on Ingredients

Components	CAS Number	% Volume
Ethylene	74-85-1	100%

## 3. Hazards Identification

### Emergency Overview

Flammable gas. May cause flash fire. May polymerize. Containers may rupture or explode if exposed. May cause difficulty breathing, central nervous system depression.

### Potential Health Effects

Inhalation : Nausea, vomiting, symptoms of drunkenness, bluish skin color, suffocation, convulsions, coma.

Eye contact : Frostbite, blurred vision.

Skin contact : Blisters, frostbite.

Ingestion : Frostbite.

Chronic Health Hazard : None known.

## 4. First Aid Measures

General advice : None.

Eye contact : Contact with liquid: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Skin contact : If frostbite occurs, immediately flush with plenty of lukewarm water (105-115°F; 41-46°C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

Ingestion : If a large amount is swallowed, get medical attention.

Inhalation : If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

Note to physicians : For inhalation, consider oxygen.

## 5. Fire-Fighting Measures

Suitable extinguishing media : Carbon dioxide, regular dry chemical.  
Large fires: Flood with fine water spray.

Specific hazards : Severe fire hazard. Severe explosion hazard. Pressurized containers may rupture or explode if exposed to sufficient heat. Electrostatic charges may be generated by flow or agitation resulting in ignition or explosion.

Fire fighting : Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers from unmanned hose holder or monitor nozzle until well after the fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Stop leak if possible without personal risk. Let fire burn unless leak can be stopped immediately. For smaller tanks or cylinders, extinguish and isolate from other flammables. Evacuation radius: 800 meters (1/2 mile). Stop flow of gas.

## 6. Accidental Release Measures

Occupational spill/release : Avoid heat, flames, sparks and other sources of ignition. Do not touch spilled material. Stop leak if possible without personal risk. Reduce vapors with water spray. Keep unnecessary people away. Isolate hazard area and deny entry. Remove sources of ignition. Ventilate closed spaces before entering.

Additional advice : None.

## 7. Handling and Storage

### Handling

Secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders.

### Storage

Store in accordance with all current regulations and standards. Grounding and bonding required. Protect from physical damage. Store in a cool, dry place. Store in a well-ventilated area. Avoid heat, flames, sparks and other sources of ignition. Keep separated from incompatible substances. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.

## 8. Exposure Controls / Personal Protection

### Exposure limits

ACGIH : 200 ppm TWA

### Engineering measures/Ventilation

Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of materials are present. Ensure compliance with applicable exposure limits.

### Personal protective equipment

Respiratory protection : Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.  
For unknown concentrations or immediately dangerous to life or death – Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-

		contained breathing apparatus operated in pressure-demand or other positive-pressure mode. Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.
Hand protection	:	Wear insulated gloves.
Eye protection	:	For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
Skin and body protection	:	For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

## 9. Physical and Chemical Properties

Form	:	Compressed gas.
Color	:	Colorless.
Odor	:	Sweet odor.
Molecular weight	:	28.05
Vapor pressure	:	760 mmHg @ -104°C
Vapor density	:	1.0 (air = 1)
Boiling point	:	-104°C
Melting point	:	-169°C
Water solubility	:	22.6%
Solvent solubility	:	Soluble: alcohol, ether, acetone, benzene.

## 10. Stability and Reactivity

Stability	:	May polymerize. Avoid storage and use above room temperature.
Conditions to avoid	:	Avoid heat, flames, sparks or other sources of ignition. Minimize contact with material. Containers may rupture or explode if exposed to heat.
Materials to avoid	:	Acids, metal salts, halogens, halo carbons, oxidizing materials, metals, peroxides.
Hazardous decomposition products	:	Thermal decomposition products: oxides of carbon.

## 11. Toxicological Information

The components of this material have been reviewed in various sources and the following endpoints are published:

ETHYLENE (74-85-1) : Inhalation LC50 Mouse: 95 ppm/2H

### Acute Toxicity Level

ETHYLENE (74-85-1) : Highly toxic: inhalation

### Component Carcinogenicity

ACGIH : A4 – Not Classifiable as a Human Carcinogen.  
IARC : Monograph 60 [1994]; Supplement 7 [1987] (Group 3 (not classifiable))  
DFG : Category 3B (could be carcinogenic for man)

### Target Organs

ETHYLENE (74-85-1) : Central nervous system.

Additional Data

Interactions with drugs may occur.

**12. Ecological Information**

Aquatic Toxicity

ETHYLENE (74-85-1) : Invertebrate: 96 Hr EC50 Daphnia magna: 53.402 mg/L

**13. Disposal Considerations**

Waste from residues : Dispose in accordance with all applicable regulations. Subject to disposal  
/ unused products regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.  
Contaminated : Return cylinder to supplier.  
packaging

**14. Transport Information**

DOT (US only)

Proper shipping : Ethylene  
name  
Class : 2.1  
UN/ID No. : UN1962  
Labeling : Flammable Gas

**15. Regulatory Information**

U.S. Federal Regulations

This material contains one or more of the following chemicals required under SARA Section 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

ETHYLENE (74-85-1) : SARA 313: 1.0% de minimis concentration

SARA 311/312

Acute: Yes  
Chronic: No  
Fire: Yes  
Reactive: Yes  
Pressure: Yes

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
ETHYLENE	74-85-1	No	Yes	Yes	Yes	Yes	Yes

Not regulated under California Proposition 65.