

M A T E R I A L   S A F E T Y   D A T A   S H E E T

Dow Chemical U.S.A.\* Midland, MI 48674 Emergency Phone: 517-636-4400

Product Code: 30049

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PRODUCT NAME: ETHYLENE

Effective Date: 01/24/91 Date Printed: 03/09/93

MSDS:003782

1. INGREDIENTS: (% w/w, unless otherwise noted)

Ethylene

CAS# 000074-85-1

99.9-100.0%

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). In addition, other substances not 'Hazardous' per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

2. PHYSICAL DATA:

BOILING POINT: -154.7F, -103.7C

VAP. PRESS: Gas

VAP. DENSITY: 1.0

SOL. IN WATER: 25.6 gm/m3 @ 0C

SP. GRAVITY: 0.566 -102/4C

APPEARANCE: Colorless gas.

ODOR: Sweet odor and taste.

3. FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT: Flammable gas

METHOD USED: Not applicable

FLAMMABLE LIMITS

LFL: 2.7%

UFL: 36.0%

EXTINGUISHING MEDIA: Dry chemical, halons, carbon dioxide, water fog. Water spray to cool exposures, valve off source and allow

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3. FIRE AND EXPLOSION HAZARD DATA: (CONTINUED)

product to burn out.

FIRE & EXPLOSION HAZARDS: Keep unnecessary people away; isolate hazard area and deny unnecessary entry. Allow fire to burn out. Highly flammable; dangerous fire and explosion risk. Protect nearby surroundings from heat with cooling water spray, being certain not to extinguish flame. If flames are accidentally extinguished, explosive reignition may occur. Stop flow of gas if it can be done safely. Keep away from ignition sources such as flames and spark producing equipment. Forms flammable mixtures with air over a wide range. Spontaneously explosive in sunlight with chlorine. Protect against static electricity and lightening.

FIRE-FIGHTING EQUIPMENT: Use positive pressure, self-contained breathing apparatus.

4. REACTIVITY DATA:

STABILITY: (CONDITIONS TO AVOID) Avoid high temperatures.

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) Acids, chlorine, oxygen, and other oxidizing materials.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion with insufficient air will produce carbon monoxide.

HAZARDOUS POLYMERIZATION: Not likely to occur under ambient conditions.

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#### 5. ENVIRONMENTAL AND DISPOSAL INFORMATION:

**ACTION TO TAKE FOR SPILLS/LEAKS:** Keep unnecessary people away; isolate hazard area and deny unnecessary entry. Ethylene and air are a fire and explosion hazard. Vapor density is approximately the same as air. Stop flow of gas if it can be done safely. Use water spray to keep fire exposed containers cool and to protect persons effecting the shut-off.

**DISPOSAL METHOD:** Ethylene is a gas at room temperature. If it becomes necessary to dispose of it, do so by venting to a safe location, preferably by burning in a flare. If vapors cannot be flared, special care must be taken to insure complete dissipation of the gas below its flammable limits.

#### 6. HEALTH HAZARD DATA:

**EYE:** If liquid contacts eye, evaporation may cause frostbite-type injury due to rapid cooling.

**SKIN CONTACT:** If liquid contacts skin, evaporation may cause frostbite-type injury due to rapid cooling.

**SKIN ABSORPTION:** Not a problem.

**INGESTION:** No hazard from gas.

**INHALATION:** In confined or poorly ventilated areas, vapors can readily accumulate and can cause unconsciousness and death due to displacement of oxygen (simple asphyxia). Signs and symptoms of excessive exposure may be anesthetic or narcotic effects.

**SYSTEMIC & OTHER EFFECTS:** Signs and symptoms of excessive

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6. HEALTH HAZARD DATA: (CONTINUED)

exposure may be central nervous system effects.

CANCER EFFECTS: Did not cause cancer in long-term animal studies.

MUTAGENICITY EFFECTS: Result of in vitro ('test tube')  
mutagenicity tests have been negative.

7. FIRST AID:

EYES: No adverse effects anticipated by this route of exposure,  
except frostbite.

SKIN: No adverse effects anticipated by this route of exposure,  
except frostbite.

INGESTION: No adverse effects anticipated by this route of  
exposure.

INHALATION: Remove to fresh air. If not breathing, give mouth-  
to-mouth resuscitation. If breathing is difficult, oxygen should  
be administered by qualified personnel. Call a physician or  
transport to a medical facility.

NOTE TO PHYSICIAN: No specific antidote. Supportive care.  
Treatment based on judgment of the physician in response to  
reactions of the patient.

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#### 8. HANDLING PRECAUTIONS:

EXPOSURE GUIDELINE: ACGIH categorizes ethylene as a simple asphyxiant. Control so that it does not reduce the oxygen concentration to below 18% by volume at standard atmospheric pressure (760 mm Hg).

VENTILATION: Use only with adequate ventilation. Lethal concentrations may exist in areas with poor ventilation.

RESPIRATORY PROTECTION: In confined or poorly ventilated areas, use an approved positive-pressure supplied-air respirator. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.

SKIN PROTECTION: For handling the gas, no skin protection should be needed. When contact with the liquid (condensed gas) is possible, wear liquid-proof, thermally protective clothing.

EYE PROTECTION: For handling the gas, wear safety glasses. When contact with the liquid (condensed gas) is possible, wear chemical goggles.

#### 9. ADDITIONAL INFORMATION:

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Avoid breathing vapors. Store in well ventilated area away from all sources of ignition - avoid high temperatures. Protect against static electricity and lightening, ground and bond all storage and transfer equipment.

MSDS STATUS: Revised sections 3, 5, and 9.

For information regarding state/provincial and federal regulations see the Regulatory Information Section.

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REGULATION INFORMATION: (Not meant to be all-inclusive--selected regulations represented.)

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See MSD Sheet for health and safety information.

#### U.S. REGULATIONS

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SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

| CHEMICAL NAME | CAS NUMBER  | CONCENTRATION |
|---------------|-------------|---------------|
| ETHYLENE      | 000074-85-1 | 99.92 %       |

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

A fire hazard

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#### REGULATORY INFORMATION (CONTINUED)

A sudden release of pressure hazard

#### CANADA REGULATIONS

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The Workplace Hazardous Materials Information System (W.H.M.I.S.)  
Classification for this product is:

A  
B1

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The Information Herein Is Given In Good Faith, But No Warranty,  
Express Or Implied, Is Made. Consult The Dow Chemical Company  
For Further Information.

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