MATERIAL SAFETY DATA SHEET

ETHYLENE

MSDS No. 01255000 ANSI/ENGLISH

1.0 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ETHYLENE

MANUFACTURER/SUPPLIER:
Amoco Chemical Company
200 East Randolph Drive
Chicago, Illinois 60601 U.S.A.

EMERGENCY HEALTH INFORMATION:
1 (800) 447-8735

EMERGENCY SPILL INFORMATION:
1 (800) 424-9300 CHEMTREC (USA)

OTHER PRODUCT SAFETY INFORMATION:
(312) 856-3907

2.0 COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS#</th>
<th>Range % by Wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene</td>
<td>74-85-1</td>
<td>100</td>
</tr>
</tbody>
</table>

(See Section 8.0, "Exposure Controls/Personal Protection", for exposure guidelines)

3.0 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Danger! Extremely flammable. Extremely cold material; can cause burns similar to frostbite. Inhalation causes chemical asphyxiation. Inhalation causes headaches, dizziness, drowsiness, and nausea, and may lead to unconsciousness.

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: Extremely cold material; can cause burns similar to frostbite.

SKIN CONTACT: Liquid can cause burns similar to frostbite.
INHALATION: Inhalation causes chemical asphyxiation. Inhalation causes headaches, dizziness, drowsiness, and nausea, and may lead to unconsciousness.

INGESTION: Ingestion of liquid can cause burns similar to frostbite.

HMIS CODE: (Health:1) (Flammability:4) (Reactivity:0)

NFPA CODE: (Health:1) (Flammability:4) (Reactivity:0)

4.0 FIRST AID MEASURES

EYE: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

SKIN: Contact with liquid: Immediately flush in cool water for at least 15 minutes. Get immediate medical attention.

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

INGESTION: If swallowed, drink plenty of water, do NOT induce vomiting. Get immediate medical attention.

5.0 FIRE FIGHTING MEASURES

FLASHPOINT: -213°F(-135°C)

UEL: 32.0%

LEL: 3.1%

AUTOIGNITION TEMPERATURE: 842°F (450°C)

FLAMMABILITY CLASSIFICATION: Extremely Flammable Liquid.

EXTINGUISHING MEDIA: Agents approved for Class B hazards (e.g., dry chemical, carbon dioxide, foam, steam) or water fog.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Extremely flammable liquid. Vapor may explode if ignited in enclosed area.

FIRE-FIGHTING EQUIPMENT: Firefighters should wear full bunker gear, including a positive pressure self-contained breathing apparatus.

PRECAUTIONS: Keep away from sources of ignition (e.g., heat and open flames). Keep container closed. Use with adequate ventilation. Do not vent into atmosphere or enclosure unless area is sufficiently ventilated to reduce vapor concentrations below flammable limit.
HAZARDOUS COMBUSTION PRODUCTS: Hazardous polymerization possible with catalyst and heat. Incomplete burning can produce carbon monoxide and/or carbon dioxide and other harmful products.

6.0 ACCIDENTAL RELEASE MEASURES

Remove or shut off all sources of ignition. Increase ventilation if possible. Wear respirator and spray with water to disperse vapors. Keep out of sewers and waterways.

7.0 HANDLING AND STORAGE

HANDLING: Keep away from ignition sources (e.g., heat, sparks, or open flames). Do not cut, puncture, or weld on or near this container.

STORAGE: Store in flammable liquids storage area. Store away from heat, ignition sources, and open flame in accordance with applicable regulations. Keep container closed.

8.0 EXPOSURE CONTROLS / PERSONAL PROTECTION

EYE: Do not get in eyes. Wear chemical goggles and face shield.

SKIN: Avoid skin contact. Wear clothing, gloves and footwear that cannot be penetrated by chemicals or oil.

INHALATION: Use with adequate ventilation. If ventilation is inadequate, use supplied- air respirator approved by NIOSH.

ENGINEERING CONTROLS: Control airborne concentrations below the exposure guidelines.

EXPOSURE GUIDELINES:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS#</th>
<th>Exposure Limits</th>
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<tbody>
<tr>
<td>Ethylene</td>
<td>74-85-1</td>
<td>ACGIH TLV-TWA: simple asphyxiant</td>
</tr>
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9.0 CHEMICAL AND PHYSICAL PROPERTIES


pH: Not determined.

VAPOR PRESSURE: Not determined.
ETHYLENE

VAPOR DENSITY: 0.98

BOILING POINT: -154°F(-103°C)

MELTING POINT: -272°F(-169°C)

SOLUBILITY IN WATER: Negligible, below 0.1%.

SPECIFIC GRAVITY (WATER=1): 0.61

10.0 STABILITY AND REACTIVITY

STABILITY: Burning can be started easily.

CONDITIONS TO AVOID: Keep away from ignition sources (e.g. heat, sparks, and open flames).

MATERIALS TO AVOID: Avoid chlorine, fluorine, and other strong oxidizers.

HAZARDOUS DECOMPOSITION: Burning can produce carbon monoxide and/or carbon dioxide and other harmful products.

HAZARDOUS POLYMERIZATION: Hazardous polymerization possible with catalyst and heat.

11.0 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY DATA:

EYE IRRITATION: Testing not conducted. See Other Toxicity Data.

SKIN IRRITATION: Testing not conducted. See Other Toxicity Data.

DERMAL LD₅₀: Testing not conducted. See Other Toxicity Data.

ORAL LD₅₀: Testing not conducted. See Other Toxicity Data.

INHALATION LC₅₀: Testing not conducted. See Other Toxicity Data.

OTHER TOXICITY DATA: Specific toxicity tests have not been conducted on this product. Our hazard evaluation is based on information from similar products, the ingredients, technical literature, and/or professional experience.

No component of this product present at levels greater than 0.1% is identified as a carcinogen by the U.S. National Toxicology Program, the U.S. Occupational Safety and Health Act, or the International Agency on Research on Cancer (IARC).

12.0 ECOLOGICAL INFORMATION
Ecological testing has not been conducted on this product.

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13.0 DISPOSAL INFORMATION

Disposal must be in accordance with applicable federal, state, or local regulations.

The container for this product can present explosion or fire hazards, even when emptied! To avoid risk of injury, do not cut, puncture, or weld on or near this container. Since the emptied containers retain product residue, follow label warnings even after container is emptied.

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14.0 TRANSPORTATION INFORMATION

U.S. DEPT OF TRANSPORTATION

Shipping Name Ethylene, Compressed
Hazard Class 2.1
Identification Number UN1962

INTERNATIONAL INFORMATION:

Sea (IMO/IMDG)

Shipping Name Ethylene, Compressed
Class 2.1
UN Number UN1962

Air (ICAO/IATA)

Shipping Name Ethylene, Compressed
Class 2.1
Subsidiary Class UN1962

European Road/Rail (ADR/RID)

Shipping Name Not determined.

Canadian Transportation of Dangerous Goods

Shipping Name Ethylene, Compressed
Hazard Class 2.1
UN Number UN1962

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15.0 REGULATORY INFORMATION
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR Part 302.4): This product is not reportable under 40 CFR Part 302.4.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR Part 355): This product is not regulated under Section 302 of SARA and 40 CFR Part 355.

SARA TITLE III SECTIONS 311/312 HAZARDOUS CATEGORIZATION (40 CFR Part 370): This product is defined as hazardous by OSHA under 29 CFR Part 1910.1200(d).

SARA TITLE III SECTION 313 (40 CFR Part 372): This product contains the following substance(s), which is on the Toxic Chemicals List in 40 CFR Part 372:

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U.S. INVENTORY (TSCA): Listed on inventory.

OSHA HAZARD COMMUNICATION STANDARD: Flammable gas. Compressed gas. Contains a component listed by ACGIH.

EC INVENTORY (EINECS/ELINCS): Not determined.

JAPAN INVENTORY (MITI): Not determined.

AUSTRALIA INVENTORY (AICS): Not determined.

KOREA INVENTORY (ECL): Not determined.

CANADA INVENTORY (DSL): Not determined.

PHILIPPINE INVENTORY (PICCS): Not determined.

16.0 OTHER INFORMATION

Prepared by:

Environment, Health and Safety Department

Issued: March 28, 1997

Supersedes: August 26, 1993

This material Safety Data Sheet conforms to the requirements of ANSI Z400.1.

This material safety data sheet and the information it contains is offered to you in good faith as
accurate. We have reviewed any information contained in this data sheet which we received from sources outside our company. We believe that information to be correct but cannot guarantee its accuracy or completeness. Health and safety precautions in this data sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. No statement made in this data sheet shall be construed as a permission or recommendation for the use of any product in a manner that might infringe existing patents. No warranty is made, either express or implied.