

Material Safety Data Sheet

Refrigerant R170 - ETHANE

Revision 09/04

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Advanced Gas Technologies
1401 Stauffer Road
Palm, PA 18070.

Telephone Number: (215) 541-4116

MSDS IDENTIFICATION CODE / NUMBER: EA

EMERGENCY TELEPHONE NUMBER

CHEMTREC (800) 424-9300

PRODUCT NAME: ETHANE

CAS NUMBER: 74-84-0

CHEMICAL FAMILY: Aliphatic Hydrocarbon

CHEMICAL FORMULA: C₂H₆

SYNONYMS: BIMETHYL
DIMETHYL
ETHYL HYDRIDE
METHYLMETHANE

2. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT NAME	EXPOSURE LIMITS	CONCENTRATION PERCENT BY WEIGHT
ETHANE CAS NUMBER: 74-84-0	None established. Keep oxygen levels above 18%.	100.0

3. HAZARDS IDENTIFICATION

NO DATA GIVEN

4. FIRST AID MEASURES

EYES

Never introduce ointment or oil into the eyes without medical advice: In case of freezing or cryogenic "burns" by rapidly evaporating liquid, DO NOT WASH EYES WITH HOT OR EVEN TEPID WATER: Remove victim from the source of contamination. Open eyelids wide to allow liquid to evaporate. If pain is present, refer the victim to an ophthalmologist for treatment and follow up. If victim cannot tolerate light, protect the eyes with a light bandage.

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SKIN

For dermal contact or frostbite, flush affected area with lukewarm water. DO NOT USE HOT WATER. A physician should see the patient promptly if the cryogenic "burn" has resulted in blistering of the dermal surface or deep tissue freezing.

INHALATION

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO BUTANE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF CONTAINED BREATHING APPARATUS.

Victims should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. If breathing has stopped administer artificial resuscitation and supplement oxygen. Further treatment should be symptomatic and supportive. Keep victim warm and quiet.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: -211 F -135 C
AUTOIGNITION: 882 F 472 C
LOWER EXPLOSIVE LIMIT: (%): 3
UPPER EXPLOSIVE LIMIT: (%): 12.4

FIRE AND EXPLOSION HAZARDS

Ethane is slightly heavier than air and may travel a considerable distance to an ignition source. Should flame be extinguished and flow of gas continue, increase ventilation to prevent flammable mixture formation in low areas or pockets.

Electrical Classification: Class 1, Group D.

EXTINGUISHING MEDIA

Carbon dioxide, dry chemical or water spray.

FIRE FIGHTING INSTRUCTIONS

If possible stop the flow of gas supply. Use water spray to cool adjacent areas.

6. ACCIDENTAL RELEASE MEASURES

Evacuate all personnel from affected areas. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is in container or container valve, contact CHEMTREC for emergency assistance or call ADVANCED GAS TECHNOLOGIES.

7. HANDLING AND STORAGE

HANDLING AND STORAGE PRECAUTIONS

Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure regulator when connecting cylinder to lower pressure (<1500psig) piping or systems. Do not heat cylinders by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.

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Protect cylinders from physical damage. Store them in a cool, dry, well-ventilated area of non-combustible construction. Keep away from heavy trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 130 F. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in - first out" inventory system to prevent full cylinders from being stored for excessive periods of time. Post "NO SMOKING OR OPEN FLAMES" signs in the storage or use area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS

Use local exhaust to prevent gas accumulation. Use general ventilation to prevent build up of flammable concentrations. Use a fume hood handling small quantities. If product is handled routinely where the potential for leaks exists, all electrical equipment must be rated for use in potentially flammable atmospheres. Consult the National Electrical Code for details.

EYE / FACE PROTECTION

Safety goggles or glasses

SKIN PROTECTION

Plastic or rubber gloves. Protective gloves made of any suitable material. Use insulated gloves if contact with liquid product may occur.

RESPIRATORY PROTECTION

Positive pressure air line with mask or self-contained breathing apparatus should be available for emergency use.

OTHER / GENERAL PROTECTION

Safety shoes, safety shower, eyewash fountain.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

A colorless gas.

ODOR

Odorless

BASIC PHYSICAL PROPERTIES

BOILING POINT:	-127.5 F	-88.6 C
MELTING POINT:	-279.9 F	-183.3 C
VAPOR PRESSURE:	558 psia	
SPECIFIC GRAVITY:	1.04	
SOLUBILITY (H2O):	Negligible	

10. STABILITY AND REACTIVITY

STABILITY: Stable

INCOMPATIBLE MATERIALS

Oxidizers.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS

Contact with evaporating liquid may cause tissue freezing.

SKIN EFFECTS

Contact with rapidly evaporating liquid can cause cryogenic "burn" or frostbite. Frostbite effects are a change in color of skin to gray or white, possibly followed by blistering.

ACUTE INHALATION EFFECTS

Ethane is a simple asphyxiant. Oxygen levels should be maintained at greater than 18 molar percent at normal atmospheric pressure which is equivalent to a partial pressure of 135 mm Hg. High concentrations of Ethane so as to exclude an adequate supply of oxygen to the lungs causes dizziness, deeper breathing due to air hunger, possible nausea and eventual unconsciousness. It may cause anesthetic effect. Ethane is relatively inactive biologically and essentially nontoxic; therefore, the major hazard is the exclusion of an adequate supply of oxygen to the lungs.

MISCELLANEOUS TOXICOLOGICAL INFORMATION

Carcinogenicity –NTP: No IARC: No NTP: No

12. ECOLOGICAL INFORMATION

NO DATA GIVEN

13. DISPOSAL INFORMATION

Do not attempt to dispose of waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to Advanced Gas Technologies for proper disposal.

14. TRANSPORT INFORMATION

PROPER SHIPPING NAME: Ethane or Ethane, compressed.

HAZARD CLASS: Flammable Gas

DOT IDENTIFICATION NUMBER: UN1035

DOT SHIPPING LABEL: Flammable Gas

15. REGULATORY INFORMATION

SARA TITLE III NOTIFICATION AND INFORMATION

SARA TITLE III - HAZARD CLASSES: Acute Health Hazard
Fire Hazard
Sudden Release of Pressure Hazard

16. OTHER INFORMATION

Hazard Rating -	HEALTH	1	Slight
	FIRE	4	Extreme
	REACTIVITY	0	Negligible

MSDS IDENTIFICATION CODE / NUMBER: EA

REFERENCE DOCUMENTATION

Ethane is non-corrosive and may be used with any common structural material.

Earth ground and bond all lines and equipment associated with the ethylene system. Electrical equipment should be non sparking or explosion-proof.

Compressed gas cylinders should not be refilled except by qualified producers of compressed gases. Shipments of a compressed gas cylinder, which has not been filled by the owner or with his (written) consent, it is in violation of Federal Law (49CFR).

For additional recommendations, consult Compress Gas Association Pamphlet P-1.

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