

MATERIAL  
SAFETY  
DATA SHEET

<b>PRODUCT NAME</b> Ethane	<b>CAS#</b> 74-84-0
<b>TRADE NAME AND SYNONYMS</b> Ethane, Methylnthane, Dimethyl, Ethyl Hydride	<b>DOT I.D. NO.</b> UN 1035
<b>CHEMICAL NAME AND SYNONYMS</b> Ethane, compressed (D.O.T)	<b>DOT HAZARD CLASS</b> Division 2.1
<b>ISSUE DATE AND REVISIONS</b> Revised January 2007	<b>FORMULA</b> C <sub>2</sub> H <sub>6</sub>
	<b>CHEMICAL FAMILY</b> Aliphatic Hydrocarbon

### HEALTH HAZARD DATA

<p><b>SYMPTOMS OF EXPOSURE</b></p> <p>Inhalation: 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.</p> <p>Contact with rapidly evaporating liquid can cause cryogenic “burns” or frostbite.</p>
<p><b>TOXICOLOGICAL PROPERTIES</b></p> <p>Ethane is inactive biological and essentially nontoxic; therefore, the major property is the exclusion of an adequate supply of oxygen to the lungs.</p> <p>Frostbite effects are a change in color of the skin to gray or white possibly followed by blistering.</p> <p>Ethane is not listed in the IARC, NTP or by OSHA as a carcinogen or potential carcinogen.</p> <p>Persons in ill health where such illness would be aggravated by exposure to ethane should not be allowed to work with or handle this product.</p>
<p><b>RECOMMENDED FIRST AID TREATMENT</b></p> <p>PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO THIS MIXTURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS AND BE COGNIZANT OF EXTREME FIRE AND EXPLOSION HAZARD.</p> <p><u>Inhalation:</u> Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given assisted respiration and supplemental oxygen. Assure that vomited material does not obstruct the airway by use of positional drainage. Further treatment should be symptomatic and supportive.</p> <p><u>Dermal contact or frostbite:</u> Remove contaminated clothing and flush affected areas 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.</p>

## HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES

Ethane is flammable in air.

### PHYSICAL DATA

BOILING POINT -127.5 °F (-88.6 °C)	LIQUID DENSITY AT BOILING POINT 34.1 lb/ft <sup>3</sup> (546 kg/m <sup>3</sup> )
VAPOR PRESSURE (21.1 °C) 558 psia (3847 KPa)	GAS DENSITY AT 70 °F . 1 atm .078 lb/ft <sup>3</sup> (1.25 kg/m <sup>3</sup> )
SOLUBILITY IN WATER Negligible	FREEZING POINT -297.9 °F (-183.3 °C)
EVAPORATION RATE N/A (Gas)	SPECIFIC GRAVITY (AIR=1) @ 70 °F (21.1°C) = 1.04
APPEARANCE AND ODOR Colorless, odorless gas	

### FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) -201 °F (-135 °C)	AUTO IGNITION TEMPERATURE 959 °F (515 °C)	FLAMMABLE LIMITS % BY VOLUME LEL 3 UEL 12.4
EXTINGUISHING MEDIA Water, dry chemical, carbon dioxide		ELECTRICAL CLASSIFICATION Class 1, Group D
SPECIAL FIRE FIGHTING PROCEDURES If possible, stop the flow of ethane. Use water spray to cool surrounding containers.		
UNUSUAL FIRE AND EXPLOSION HAZARDS Ethane is slightly heavier than air and may travel a considerable distance to a source of ignition. Should flame be extinguished and flow of gas continue, increase ventilation to prevent flammable mixture formation in low areas or pockets.		

### REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID
Unstable		N/A
Stable	X	
INCOMPATIBILITY (Materials to avoid) None		
HAZARDOUS DECOMPOSITION PRODUCTS Carbon Monoxide		
HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID
May Occur		N/A
Will Not Occur	X	

### SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type) Positive pressure air line with mask or self-contained breathing apparatus should be available for emergency use.	
VENTILATION Hood with forced ventilation	SPECIAL N/A
MECHANICAL (Gen.) In accordance with electrical codes	OTHER N/A
LOCAL EXHAUST To prevent accumulation above the LEL.	
PROTECTIVE GLOVES Plastic rubber	
EYE PROTECTION Safety goggles or glasses	
OTHER PROTECTIVE EQUIPMENT Safety shoes, safety showers, eyewash "fountain".	

## **SPILL OR LEAK PROCEDURES**

### **STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Evacuate all personnel from affected area. 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 HSG for special advice.

### **WASTE DISPOSAL METHOD**

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 your supplier. For emergency disposal assistance, contact HSG for special advice.

## **SPECIAL PRECAUTIONS\***

### **SPECIAL LABELING INFORMATION**

DOT Shipping Name: Ethane Compressed

DOT Shipping Label: Flammable Gas

DOT Hazard Class: Division 2.1

I.D. No.: UN 1035

### **SPECIAL HANDLING RECOMMENDATIONS**

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 reducing regulator when connecting cylinder to lower pressure (<2,000 psig) piping or systems. Do not heat cylinder 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.

### **SPECIAL STORAGE RECOMMENDATIONS**

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125°F (52°C). 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 being stored for excessive periods of time.

### **SPECIAL PACKING RECOMMENDATIONS**

Ethane is noncorrosive and may be used with any common structural material.

### **OTHER RECOMMENDATIONS OR PRECAUTIONS**

Earth-ground and bond all lines and equipment associated with the diboran system. Electrical equipment should be non-sparking or explosion proof. Compressed gas cylinders should not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with his (written) consent is a violation of Law.

Always secure cylinders in an upright position before transporting them. NEVER transport cylinders in trunks of vehicles, enclosed vans, truck cabs or in passenger compartments. Transport cylinders secured in open flatbed or in open pick-up type vehicles.

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