

MATERIAL SAFETY DATA SHEET

Date Printed: 03/17/2008

Date Updated: 02/01/2006

Version 1.4

Section 1 - Product and Company Information

Product Name ETHANE, 99.99%
Product Number 539775
Brand ALDRICH

Company Sigma-Aldrich
Address 3050 Spruce Street
SAINT LOUIS MO 63103 US

Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313 No
ETHANE GAS	74-84-0	No

Formula C2H6
Synonyms Bimethyl * Dimethyl * Ethane (ACGIH:OSHA) * Ethyl
hydride * Methylnmethane
RTECS Number: KH3800000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Flammable (USA) Extremely Flammable (EU).
Extremely flammable.
Danger: flammable gas under pressure.

HMIS RATING

HEALTH: 0
FLAMMABILITY: 4
REACTIVITY: 0

NFPA RATING

HEALTH: 0
FLAMMABILITY: 4
REACTIVITY: 0

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE

Contamination of the eyes should be treated by immediate and prolonged irrigation with copious amounts of water. Assure adequate flushing of the eyes by separating the eyelids with fingers.

Section 5 - Fire Fighting Measures

FLAMMABLE HAZARDS

Flammable Hazards: Yes

EXPLOSION HAZARDS

May form explosive mixtures with air Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

FLASH POINT

- 211.0 °F - 135.0 °C Method: closed cup

EXPLOSION LIMITS

Lower: 2.9 % Upper: 13 %

AUTOIGNITION TEMP

472 °C

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s): Extremely flammable. Vapor may travel considerable distance to source of ignition and flash back.

Emits toxic fumes under fire conditions.

Specific Method(s) of Fire Fighting: Do not extinguish burning gas if flow cannot be shut off immediately. Use water spray or fog nozzle to keep cylinder cool. Move cylinder away from fire if there is no risk.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area and keep personnel upwind. Shut off all sources of ignition. Shut off leak if there is no risk.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Ventilate area and wash spill site after material pickup is

complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Do not breathe gas. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed. Keep away from heat, sparks, and open flame. Use with equipment rated for cylinder pressure, and of compatible materials of construction. Close valve when not in use and when empty. Make sure cylinder is properly secured when in use or stored. Cylinder temperature should not exceed 125°F (52°C).

Unsuitable: Store away from heat and direct sunlight

SPECIAL REQUIREMENTS

Contents under pressure.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Warning: suck-back into cylinder may cause rupture. Use back-flow-preventive device in piping.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
---------	--------	------	-------

USA	ACGIH	ACGIH	TWA
-----	-------	-------	-----

Remarks: Simple asphyxiant, No TWA

USA	MSHA	Standard	MSHA
-----	------	----------	------

Remarks: Asphyxiants/Gases. Asphyxiants/Gases.

New Zealand OEL OEL

Remarks: check ACGIH TLV check ACGIH TLV

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Compressed gas	
Property	Value	At Temperature or Pressure
Molecular Weight	30.07 AMU	
pH	N/A	
BP/BP Range	- 88.0 °C	760 mmHg
MP/MP Range	- 172.0 °C	
Freezing Point	N/A	
Vapor Pressure	28842 mmHg	21.1 °C

Vapor Density	1.05 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	N/A	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	- 211.0 °F	Method: closed cup
	- 135.0 °C	
Explosion Limits	Lower: 2.9 %	
	Upper: 13 %	
Flammability	N/A	
Autoignition Temp	472 °C	
Refractive Index	N/A	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: May cause eye irritation.

Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract. Can cause rapid suffocation.

Ingestion: May be harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Narcotic effect. Exposure may cause:

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

APPROPRIATE METHOD OF DISPOSAL OF CONTAMINATED PACKAGING

Caution: no-return cylinder. Do not reuse. Empty cylinder will contain hazardous residue. Follow proper disposal techniques.

Section 14 - Transport Information

DOT

Proper Shipping Name: Ethane
UN#: 1035
Class: 2.1
Packing Group: None
Hazard Label: Flammable gas
PIH: Not PIH

IATA

Proper Shipping Name: Ethane
IATA UN Number: 1035
Hazard Class: 2.1
Not Allowed - Aircraft: Cargo aircraft only. Not permitted on passenger aircraft.

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: F+
Indication of Danger: Extremely Flammable.
R: 12
Risk Statements: Extremely flammable.
S: 9-16-33
Safety Statements: Keep container in a well-ventilated place. Keep away from sources of ignition - no smoking. Take precautionary measures against static discharges.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Flammable (USA) Extremely Flammable (EU).
Risk Statements: Extremely flammable.
Safety Statements: Keep container in a well-ventilated place. Keep away from sources of ignition - no smoking. Take precautionary measures against static discharges. In case of insufficient ventilation, wear suitable respiratory equipment.
US Statements: Danger: flammable gas under pressure.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No
TSCA INVENTORY ITEM: Yes Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to

appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.