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

Formula C2H6
Synonyms Bimethyl * Dimethyl * Ethane (ACGIH:OSHA) * Ethyl hydride * Methylmethane
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
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 USA       ACGIH ACGIH TWA
Remarks: Simple asphyxiant, No TWA
USA USA       MSHA Standard MSHA
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 %
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
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.

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
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