

GAS INNOVATIONS

MATERIAL SAFETY DATA SHEET: ETHANE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

GAS INNOVATIONS
18005 E. Hwy 225
La Porte, TX 77571
INFORMATON CONTACT:

EMERGENCY CONTACT:
3 E COMPANY 866-303-2640
Calls Originating Outside the US:
281-471-2200 (Collect Calls Accepted)

SUBSTANCE: ETHANE

TRADE NAMES/SYNONYMS:

BIMETHYL; ETHANE, COMPRESSED; METHYLMETHANE; DIMETHYLETHYL HYDRIDE; UN 1035.

CHEMICAL FAMILY: hydrocarbons, gas

CREATION DATE: Dec 15 2009

REVISION DATE:

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: ETHANE

CAS NUMBER: 74-84-0

PERCENTAGE: 100.0

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=2 FIRE=4 REACTIVITY=0



EMERGENCY OVERVIEW:

COLOR: colorless

PHYSICAL FORM: gas

ODOR: sweet odor

MAJOR HEALTH HAZARDS: difficulty breathing

PHYSICAL HAZARDS: Flammable gas. May cause flash fire.

POTENTIAL HEALTH EFFECTS:

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INHALATION:

SHORT TERM EXPOSURE: irritation, nausea, vomiting, irregular heartbeat, headache, dizziness, disorientation, emotional disturbances, tingling sensation, loss of coordination, suffocation, convulsions, unconsciousness, coma

LONG TERM EXPOSURE: no information on significant adverse effects

SKIN CONTACT:

SHORT TERM EXPOSURE: frostbite

LONG TERM EXPOSURE: no information is available

EYE CONTACT:

SHORT TERM EXPOSURE: frostbite

LONG TERM EXPOSURE: no information is available

INGESTION:

SHORT TERM EXPOSURE: ingestion of harmful amounts is unlikely

LONG TERM EXPOSURE: ingestion of harmful amounts is unlikely

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

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

INGESTION: If a large amount is swallowed, get medical attention.

NOTE TO PHYSICIAN: For inhalation, consider oxygen.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Severe fire hazard. Severe explosion hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Vapor/air mixtures are explosive. Electrostatic discharges may be generated by flow or agitation resulting in ignition or explosion.

EXTINGUISHING MEDIA: carbon dioxide, regular dry chemical
Large fires: Flood with fine water spray.

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FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Stop leak if possible without personal risk. Let burn unless leak can be stopped immediately. For smaller tanks or cylinders, extinguish and isolate from other flammables. Evacuation radius: 800 meters (1/2 mile). Stop flow of gas.

FLASH POINT: -211 F (-135 C) (CC)

LOWER FLAMMABLE LIMIT: 3.0%

UPPER FLAMMABLE LIMIT: 12.5%

AUTOIGNITION: 882 F (472 C)

6. ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:

Avoid heat, flames, sparks and other sources of ignition. Do not touch spilled material. Stop leak if possible without personal risk. Reduce vapors with water spray. Keep unnecessary people away, isolate hazard area and deny entry. Remove sources of ignition. Ventilate closed spaces before entering.

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Grounding and bonding required. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

ETHANE:

No occupational exposure limits established.

VENTILATION: Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

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CLOTHING: For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

GLOVES: Wear insulated gloves.

RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Any self-contained breathing apparatus with a full facepiece.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: gas

COLOR: colorless

ODOR: sweet odor

MOLECULAR WEIGHT: 30.07

MOLECULAR FORMULA: C-H₃-C-H₃

BOILING POINT: -128 F (-89 C)

FREEZING POINT: -297 F (-183 C)

VAPOR PRESSURE: 28842 mmHg @ 21 C

VAPOR DENSITY (air=1): 1.05

SPECIFIC GRAVITY: Not applicable

DENSITY: 1.242 g/L @ 25 C

WATER SOLUBILITY: 4.7% @ 20 C

PH: Not applicable

VOLATILITY: 100%

ODOR THRESHOLD: 899 ppm

EVAPORATION RATE: Not applicable

VISCOSITY: 0.00852 cP @ 0 C

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable

SOLVENT SOLUBILITY:

Soluble: benzene, ethanol

Slightly Soluble: acetone

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition.

Minimize contact with material. Containers may rupture or explode if exposed to heat.

INCOMPATIBILITIES: oxidizing materials

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: oxides of carbon

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POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

ETHANE:

ADDITIONAL DATA: Stimulants such as epinephrine may induce ventricular fibrillation.

12. ECOLOGICAL INFORMATION

FATE AND TRANSPORT:

KOW: 912.01 (log = 2.97) (estimated from water solubility)

KOC: 1857.80 (log = 3.27) (estimated from water solubility)

HENRY'S LAW CONSTANT: 2.4 E -2 atm-m³/mol

BIOCONCENTRATION: 1.42 (estimated from water solubility)

AQUATIC PROCESSES: 1.4256224 hours (River Model: 1 m deep, 1 m/s flow, 3 m/s wind)

ENVIRONMENTAL SUMMARY: Relatively non-persistent in the environment. Leaches through the soil or the sediment at a slow rate. Accumulates very little in the bodies of living organisms. Highly volatile from water.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Ethane

ID NUMBER: UN1035

HAZARD CLASS OR DIVISION: 2.1

LABELING REQUIREMENTS: 2.1

QUANTITY LIMITATIONS:

PASSENGER AIRCRAFT OR RAILCAR: Forbidden

CARGO AIRCRAFT ONLY: 150 kg

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

SHIPPING NAME: Ethane

UN NUMBER: UN1035

CLASS: 2.1



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15. REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE: Yes

CHRONIC: No

FIRE: Yes

REACTIVE: No

SUDDEN RELEASE: Yes

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:

California Proposition 65: Not regulated.

CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: A, B1.

NATIONAL INVENTORY STATUS:

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

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): Listed on inventory.

16. OTHER INFORMATION

THE INFORMATION, RECOMMENDATIONS, AND SUGGESTIONS HEREIN WERE COMPILED FROM REFERENCE MATERIAL AND OTHER SOURCES BELIEVED TO BE RELIABLE. HOWEVER, THE MSDS'S ACCURACY OR COMPLETENESS IS NOT GUARANTEED BY GAS INNOVATIONS OR ITS AFFILIATES, NOR IS ANY RESPONSIBILITY ASSUMED OR IMPLIED FOR ANY LOSS OR DAMAGE RESULTING FROM INACCURACIES OR OMISSIONS. SINCE CONDITIONS OF USE ARE BEYOND OUR CONTROL, NO WARRANTIES OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSED OR IMPLIED. THIS MSDS IS NOT INTENDED AS A LICENSE TO OPERATE UNDER, OR RECOMMENDATION TO INFRINGE ON, ANY PATENTS. APPROPRIATE WARNINGS AND SAFE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS AND USERS.