Ethane

Safety Data Sheet

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	:	Mixture
Product name	:	Ethane
Formula	:	CH3CH3
Other means of identification	:	Dimethyl, methyl methane

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Feedstock

1.3. Details of the supplier of the safety data sheet

EnLink Midstream
1722 Routh Street
Suite 1300
Dallas, TX 75201
www.enlink.com

1.4. Emergency telephone number

Emergency number : 866-394-9839
CHEMTREC: 1-800-824-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Simple Asphy H380
Liquefied gas H280
Flam. Liq. 1 H224
Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS02 GHS04

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H220 - Extremely flammable gas
H280 - Contains gas under pressure; may explode if heated

Precautionary statements (GHS-US) : P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely
P381 - In case of leaking gas fire, eliminate all ignition sources if safe to do so
P403 - Store in a well-ventilated place
P410+P403 - Protect from sunlight. Store in a well-ventilated place

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Ethane	(CAS No) 74-84-0	95 - 99	Flam. Gas 1, H220 Compressed gas, H280
Methane	(CAS No) 74-82-8	1 - 5	Flam. Gas 1, H220 Compressed gas, H280
Propane	(CAS No) 74-98-6	0.3 - 3	Simple Asphy, H380 Flam. Gas 1, H220 Compressed gas, H280

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

First-aid measures after inhalation : If exposed: Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

First-aid measures after skin contact : Wash with soap and large amounts of tepid water (not to exceed 105F) for at least 15 minutes. Remove and isolate contaminated clothing and shoes. Clothing frozen to the skin should be thawed before being removed. In case of contact with liquefied gas, thaw frosted parts with lukewarm water. In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.

First-aid measures after eye contact : Flush eyes with lukewarm water for 15 minutes opening and closing eyelids to ensure adequate rinsing. If redness, irritation, pain, or tearing occurs, seek medical attention. Remove contact lenses, if present and easy to do. Continue rinsing.

First-aid measures after ingestion : Not an anticipated route of entry.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : Asphyxiant gas. High concentrations in the immediate area can displace oxygen and cause central nervous system depression from oxygen deprivation. Symptoms may include headache, excitation, euphoria, dizziness, incoordination, drowsiness, light-headedness, blurred vision, fatigue, tremors, and convulsions, loss of consciousness, coma, respiratory arrest and death depending on concentration and length of exposure. Acute or chronic overexposure may cause systemic damage including adverse effects to the central nervous system, liver, kidney and blood.

Symptoms/injuries after skin contact : Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.

Symptoms/injuries after eye contact : Some slight irritation can occur on mucous membranes. However, greater hazard may be due to pressure issues of material storage.

Symptoms/injuries after ingestion : Not expected to be a significant route of entry.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : For small fires — Class B fire-extinguishing media such as CO2, dry chemical, foam (AFFF/ATC) or water spray can be used. Larger fires -water spray, fog or foam (AFFF/ATC) can be used.

5.2. Special hazards arising from the substance or mixture

Fire hazard : EXTREMELY FLAMMABLE. Will be easily ignited by heat, sparks or flames. Vapors from liquefied gas are initially heavier than air and spread along ground. Vapors may travel to source of ignition and flash back. Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.

Explosion hazard : Containers may explode when heated. Ruptured cylinders may rocket.

Reactivity : Extremely flammable liquid and vapor.

5.3. Advice for firefighters

Firefighting instructions : Move containers from fire area if you can do it without risk. Gas fires should not be extinguished unless the gas flow can be stopped immediately. Shut off gas source and allow the fire to burn out.

Protection during firefighting : Wear positive pressure self-contained breathing apparatus (SCBA).Structural firefighters' protective clothing will only provide limited protection. Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

Other information : Fire: If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Eliminate every possible source of ignition.

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel. Large Spill: Consider initial downwind evacuation for at least 800 meters (1/2 mile).

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Many gases are heavier than air and will spread along ground and collect in low or confined areas. Keep out of low areas. Use spark-proof tools and explosion proof equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Stop leak if you can do it without risk. If possible, turn leaking containers so that gas escapes rather than liquid.

Methods for cleaning up : Large Spill: Dike far ahead of liquid spill for later disposal. Water spray may reduce vapor; but may not prevent ignition in closed spaces. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : In use, may form flammable vapor-air mixture. Do not pressurize, cut, or weld containers. Handle empty containers with care because residual vapors are flammable.

Precautions for safe handling : Avoid contact with skin, eyes and clothing. Earth all parts which can be electrically charged. Prevent the build-up of electrostatic charge.

Hygiene measures : Avoid repeated or prolonged skin exposure. Practice good housekeeping. Wash thoroughly after handling. Change contaminated clothing. Do not reuse until laundered.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment. Store in a segregated, approved and labelled area. Ensure effective ventilation. Vent waste air only via suitable separators or scrubbers. Take precautionary measures against electrostatic discharges.

Storage conditions : Keep away from heat, sparks and flame surfaces. Keep container tightly closed in a dry and well-ventilated place.

Incompatible products : Store away from strong oxidizing materials. Strong acids. Strong

Incompatible materials : bases. Sources of ignition. Heat sources.

7.3. Specific end use(s)

Use of the substance/mixture : Feedstock

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Propane (74-98-6)		
ACGIH	ACGIH TWA (mg/m^3)	4508 mg/m^3
ACGIH	ACGIH TWA (ppm)	2500 ppm
ACGIH	Remark (ACGIH)	Asphyxiant; CNS effects; Explosive
OSHA	OSHA PEL (TWA) (mg/m^3)	1800 mg/m^3

Propane (74-98-6)		
OSHA	OSHA PEL (TWA) (ppm)	1000 ppm

Ethane (74-84-0)		
ACGIH	ACGIH TWA (ppm)	Formerly 1000 ppm Based on Aliphatic hydrocarbon gases, Alkanes [C1-C4] ; Refer to Appendix F : Minimal Oxygen Content of the 2014 TLV Book
ACGIH	Remark (ACGIH)	Simple Asphyxiant if Oxygen level is 19.5% by volume; Explosive
OSHA	Not applicable	

Methane (74-82-8)		
ACGIH	ACGIH TWA (ppm)	Formerly 1000 ppm Based on Aliphatic hydrocarbon gases, Alkanes [C1-C4] ; Refer to Appendix F : Minimal Oxygen Content of the 2014 TLV Book
ACGIH	Remark (ACGIH)	Simple Asphyxiant; Explosive
OSHA	Not applicable	

8.2. Exposure controls

Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure good ventilation of the work station.

Materials for protective clothing : Nitrile.

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical.

Eye protection : Ensure proper use of goggles and/or face shields in handling of any pressurized gases or materials.

Skin and body protection : Fire retardant clothing is recommended.

Respiratory protection : If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Gas

Appearance : Colorless gas.

Color : Colorless

Odor : Hydrocarbon

Odor threshold : No data available

pH : Neutral

Relative evaporation rate (butylacetate=1) : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : -161.6 - -41 °C (-259-(-43°F)

Flash point : -149 °C (-211°F)

Critical temperature : 32 °C (90°F)

Auto-ignition temperature : 515 °C (959°F)

Decomposition temperature : No data available

Flammability (solid, gas) : No data available

Vapor pressure : 37.9 atm (at 70°F) (557 psi)

Vapor pressure at 50 °C : 68 atm (1000 psi)

Relative vapor density at 20 °C : 1.04 (AIR=1)

Relative density : 0.35 - 0.7 (H20=1)

Solubility : No data available

Log Pow : No data available

Log Kow : No data available

Viscosity, kinematic : No data available

Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidising properties : No data available
Explosive limits : 3.2 - 12.5 vol %

SECTION 10: Stability and reactivity

10.1. Reactivity

Extremely flammable liquid and vapor.

10.2. Chemical stability

Stable at normal temperatures and pressure.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat, sparks, open flame, and other ignition sources.

10.5. Incompatible materials

Strong Oxidizers, i.e. chlorates, bromates, peroxides, nitrates, halons.

10.6. Hazardous decomposition products

Combustion may produce carbon monoxide and other harmful substances.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Ethane (74-84-0)	
Additional information	From a toxicologic standpoint, methane and ethane are of low anesthetic potency and are practically inert; however, at very high concentrations, they act as a simple asphyxiant and can cause suffocation by displacement of oxygen from breathing atmosphere, below the critical level of 19.5% oxygen that is required to sustain life.

Skin corrosion/irritation : Not classified
pH: Neutral

Serious eye damage/irritation : Not classified
pH: Neutral

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : Asphyxiant gas. High concentrations in the immediate area can displace oxygen and cause central nervous system depression from oxygen deprivation. Symptoms may include headache, excitation, euphoria, dizziness, incoordination, drowsiness, light-headedness, blurred vision, fatigue, tremors, and convulsions, loss of consciousness, coma, respiratory arrest and death depending on concentration and length of exposure. Acute or chronic overexposure may cause systemic damage including adverse effects to the central nervous system, liver, kidney and blood.

Symptoms/injuries after skin contact : Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.

Symptoms/injuries after eye contact : Some slight irritation can occur on mucous membranes. However, greater hazard may be due to pressure issues of material storage.

Symptoms/injuries after ingestion : Not expected to be a significant route of entry.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

Ethane	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Ethane	
Bioaccumulative potential	This product is not expected to bioaccumulate.
Propane (74-98-6)	
Log Pow	2.3
Ethane (74-84-0)	
Log Pow	<= 2.3

12.4. Mobility in soil

Ethane (74-84-0)	
Mobility in soil	If released to soil, ethane is expected to have very high mobility based upon an estimated Koc of 37.

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Disposal of this material must be done in accordance with federal, state and/or local regulations. The material destined for disposal must be characterized properly and may differ from the product described in this SDS if mixed with other wastes.

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1969 Isobutane, 2.1

UN-No.(DOT) : UN1969

Proper Shipping Name (DOT) : Isobutane

Department of Transportation (DOT) Hazard Classes : 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115

Hazard labels (DOT) : 2.1 - Flammable gas

DOT Special Provisions (49 CFR 172.102) : 19 - For domestic transportation only, the identification number UN1075 may be used in place of the identification number specified in column (4) of the 172.101 table. The identification number used must be consistent on package markings, shipping papers and emergency response information.
T50 - When portable tank instruction T50 is referenced in Column (7) of the 172.101 Table, the applicable liquefied compressed gases are authorized to be transported in portable tanks in accordance with the requirements of 173.313 of this subchapter.

DOT Packaging Exceptions (49 CFR 173.xxx) : 306

DOT Packaging Non Bulk (49 CFR 173.xxx) : 304

DOT Packaging Bulk (49 CFR 173.xxx) : 314;315

DOT Quantity Limitations Passenger aircraft/rail : Forbidden
(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 150 kg
CFR 175.75)

DOT Vessel Stowage Location : E - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded.

DOT Vessel Stowage Other : 40 - Stow “clear of living quarters”

Additional information

Other information : No supplementary information available.

ADR

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Ethane

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

Propane (74-98-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Not listed on the United States SARA Section 313

Ethane (74-84-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Not listed on the United States SARA Section 313

Methane (74-82-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Not listed on the United States SARA Section 313

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

15.2.2. National regulations

15.3. US State regulations

Propane (74-98-6)

U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances

Ethane (74-84-0)

U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances

Methane (74-82-8)
U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances

SECTION 16: Other information

Revision date : 07/14/2015 and 06/04/2019

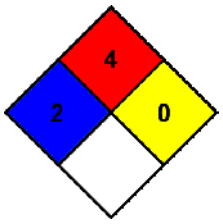
Full text of H-phrases::

Compressed gas	Gases under pressure : Compressed gas
Flam. Gas 1	Flammable gases, Category 1
Liquefied gas	Gases under pressure : Liquefied gas
Simple Asphy	Simple Asphyxiant
H220	Extremely flammable gas
H280	Contains gas under pressure; may explode if heated
H380	May displace oxygen and cause rapid suffocation

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 4 Severe Hazard

Physical : 0 Minimal Hazard

SDS US (GHS HazCom 2012)

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