

**1. PRODUCT AND COMPANY IDENTIFICATION**

<b>Product Code:</b>	00021	
<b>Product Name:</b>	Refrigerated Ethane	
<b>Company Name:</b>	Gas Innovations	<b>Phone Number:</b>
	18005 E. Hwy 225	+1 (281)471-2200
	La Porte, TX 77571	
<b>Web site address:</b>	www.gasinnovations.com	
<b>Emergency Contact:</b>	3E (within United States)	+1 (866)303-2640
<b>Information:</b>	Infotrac (outside of United States)	+1 (352)323-3500

**2. HAZARDS IDENTIFICATION**

Flammable Gases, Category 1

Gas Under Pressure, Refrigerated liquefied gas

Simple Asphyxiant

**GHS Signal Word:** Danger

**GHS Hazard Phrases:** H220 - Extremely flammable gas.  
H281 - Contains refrigerated gas; may cause cryogenic burns or injury.  
HUS1 - May displace oxygen and cause rapid suffocation.

**GHS Precaution Phrases:** P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P282 - Wear cold insulating gloves/face shield/eye protection.

**GHS Response Phrases:** P315 - Get immediate medical advice/attention.  
P336 - Thaw frosted parts with lukewarm water. Do not rub affected areas.  
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
P381 - Eliminate all ignition sources if safe to do so.

**GHS Storage and Disposal Phrases:** P403 - Store in well-ventilated place.

**OSHA Regulatory Status:** This material is classified as hazardous under OSHA regulations.

**Inhalation:** In elevated concentrations, may cause asphyxiation, central nervous system effects and increased breathing rate. Symptoms of asphyxia include headache, dizziness, rapid breathing, increased pulse, mood changes, tremors, cyanosis, muscular weakness, narcosis, numbness of the extremities, unconsciousness and death.

**Skin Contact:** Contact with gas/liquid escaping the container: May cause frostbite or freeze burns.

**Eye Contact:** Contact with gas/liquid escaping the container: May cause frostbite or freeze burns. May cause permanent damage.

**Ingestion:** Not a likely route of exposure. Contact with gas/liquid escaping the container: May cause frostbite or freeze burns.

**Additional Hazards Information** Exposure may aggravate pre-existing eye, skin, or respiratory conditions. Contact with gas escaping the container can cause frostbite. At very high concentrations, cardiac sensitization to the action of adrenaline can occur.

Unknown Acute Toxicity (GHS-US): No data available.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	Hazardous Components (Chemical Name)	Concentration
74-84-0	Ethane	99.5 %
74-82-8	Methane	<=0.1 %
74-98-6	Propane	<=0.5 %

### 4. FIRST AID MEASURES

<b>Emergency and First Aid Procedures:</b>	If you feel unwell, seek medical advice (show the label where possible). Never give anything by mouth to an unconscious person. If frostbite or freezing has occurred, immediately call a poison center for proper washing temperatures. If frostbite or freezing has occurred, immediately flush with plenty of lukewarm water to GENTLY warm the affected area. Do NOT use hot water. Do not rub affected area. Get medical attention immediately.
<b>In Case of Inhalation:</b>	Get immediate medical attention if breathing difficulty persists. First, take proper precautions to ensure your own safety before attempting rescue (e.g. wear appropriate respiratory protective equipment, use the buddy system). Remove victim to fresh air and keep at rest in a position comfortable for breathing.
<b>In Case of Skin Contact:</b>	Remove contaminated clothing and shoes. If frostbite or freezing has occurred, immediately call a poison center for proper washing temperatures. Thaw frosted parts with lukewarm water. Do not rub affected areas. Get medical attention immediately.
<b>In Case of Eye Contact:</b>	Immediately call a poison center for proper washing temperatures. If frostbite or freezing has occurred, immediately flush with plenty of lukewarm water to GENTLY warm the affected area. Do NOT use hot water. Do not rub eyes. Get immediate medical advice/attention.
<b>In Case of Ingestion:</b>	Never give anything by mouth to an unconscious person.
<b>Signs and Symptoms Of Exposure:</b>	Contains refrigerated gas; may cause cryogenic burns or injury. May displace oxygen and cause rapid suffocation.
<b>Indication of any immediate medical attention and special treatment needed:</b>	IF exposed or concerned: Get medical attention/advice. If medical advice is needed, have product container or label at hand.
<b>Note to Physician:</b>	Treat symptomatically and supportively. Show this safety data sheet to the doctor in attendance.

### 5. FIRE FIGHTING MEASURES

<b>Flash Pt:</b>	-211 F (-135 C) Method Used: Estimate
<b>Explosive Limits:</b>	LEL: 2.9% (V) UEL: 13% (V)
<b>Autoignition Pt:</b>	NA
<b>Suitable Extinguishing Media:</b>	Stop the flow of gas. If the flow cannot be stopped, let the fire burn out while cooling the cylinder and the surrounding areas using a water spray. Extinguish secondary fires with water spray, stream or fog in flooding amounts.
<b>Unsuitable Extinguishing Media:</b>	Halogenated compounds, Simultaneous use of foam and water is to be avoided as water destroys the foam.
<b>Fire Fighting Instructions:</b>	Fight fire remotely due to the risk of explosion. Withdraw immediately if the venting safety device is operating or there is any discoloration of tank due to fire. Remove containers from fire area if you can do so without risk. Do not extinguish unless leak can be stopped safely. Use water spray to keep fire-exposed containers cool. After the fire has been extinguished, explosive, toxic atmospheres may linger. If possible, avoid spraying cold areas of equipment to avoid rapid freezing of water, which can result in heavy icing and possible blockage of pressure release valves. Before entering such an area, especially

confined areas, check the atmosphere with an appropriate monitoring device. Do not breathe vapors/fumes from fires or vapors from decomposition. Use water spray to disperse vapors.

**Flammable Properties and Hazards:**

Extremely flammable gas. May produce explosion with chlorine. May form explosive mixtures in air. Container may rupture or explode if exposed to heat. Vapors are heavier than air and may travel to a source of ignition and flash back. If exposed to fire, the container may undergo a BLEVE (boiling liquid expanding vapor explosion).

**Hazardous Combustion Products:**

High temperatures and fire conditions can result in the formation of carbon monoxide and carbon dioxide, hydrogen gas, and unburned hydrocarbons.

## 6. ACCIDENTAL RELEASE MEASURES

**Protective Precautions, Protective Equipment and Emergency Procedures:**

Use proper personal protective equipment as indicated in Section 8.

**Environmental Precautions:**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Steps To Be Taken In Case Material Is Released Or Spilled:**

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Evacuate unnecessary personnel. Ensure adequate ventilation. Do not get in eyes, on skin or on clothing. Do not breathe vapor or mist. Gas/vapor is heavier than air and may accumulate in confined spaces, particularly at or below ground level. Gas will displace oxygen and cause rapid suffocation in confined areas.

Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Isolate the area. Ventilate the area before entry. Stop leak if you can do it without risk. Consider the use of water spray to disperse vapors. Use only non-sparking tools and equipment. Contact local authorities.

## 7. HANDLING AND STORAGE

**Precautions To Be Taken in Handling:**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid prolonged contact with eyes, skin and clothing. Do not breathe gas. Handle as a flammable gas. Keep away from heat, sparks and flame. Electrical equipment should be approved for classified area. Ground and bond containers when transferring material. Close valve after each use and when empty.

**Precautions To Be Taken in Storing:**

Store in a cool, dry, well-ventilated area away from incompatible substances. Keep container closed when not in use. Do not store in direct sunlight. Avoid extremely high or low temperatures. Store in flameproof cabinet/area. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Store at temperatures not exceeding 52°C/125°F.

**Other Precautions:**

Handle empty containers with care because residual vapors are flammable. Ruptured cylinders may rocket. Do not pressurize, cut, heat, or weld containers. Asphyxiating gas at high concentrations. This product contains light hydrocarbon material, which is associated with cardiac sensitization following very high exposures or with concurrent exposure to high stress levels or heart-stimulating substances like epinephrine and catecholamines. Careful consideration should be applied preceding administration of epinephrine or similar heart stimulating substances. Handle in accordance with good industrial hygiene and safety practices. Keep out of reach of children.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
74-84-0	Ethane	No data.	TLV: Simple asphyxiant ppm	No data.
74-82-8	Methane	No data.	TLV: Simple asphyxiant ppm	No data.
74-98-6	Propane	TWA: 1800 mg/m <sup>3</sup> (1000 ppm)	TWA: (2500 ppm)	No data.

CAS #	Chemical Name	Jurisdiction	Recommended Exposure Limits	Notations
74-98-6	Propane	California, USA PELs	TWA: 1800 mg/m <sup>3</sup> (1000 ppm)	
		NIOSH	TWA: 1800 mg/m <sup>3</sup> (1000 ppm)	

<b>Recommended Exposure Limits:</b>	Propane (74-98-6): USA NIOSH REL (TWA): 1800 MG/M3 USA NIOSH REL (TWA): 1000 ppm USA IDLH: 2100 ppm (10% LEL) USA OSHA PEL (TWA): 1800MG/M3 USA OSHA PEL (TWA): 1000 ppm.
<b>Respiratory Equipment (Specify Type):</b>	Use a NIOSH/MSHA approved respirator if ventilation is not sufficient to effectively prevent buildup of vapors or mists and the exposure limit is exceeded.
<b>Eye Protection:</b>	Chemical safety goggles. A full-face shield is recommended where there is a potential for eye contact.
<b>Protective Gloves:</b>	Wear appropriate protective gloves to prevent skin exposure. Chemical-resistant cryogenic gloves. If material is cold, wear thermally resistant protective gloves.
<b>Other Protective Clothing:</b>	Wear appropriate protective clothing to prevent skin exposure. Wear fire/flame resistant/retardant clothing. Chemical resistant apron. Chemical resistant gloves.
<b>Engineering Controls (Ventilation etc.):</b>	Ensure adequate ventilation, especially in confined areas. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use explosion-proof ventilation equipment. Proper grounding procedures to avoid static electricity should be followed. Gas detectors should be used when flammable gases or vapors may be released. Oxygen detectors should be used when asphyxiating gases may be released. Ensure all national/local regulations are observed.
<b>Work/Hygienic/Maintenance Practices:</b>	Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink, or smoke when using.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical States:</b>	[ ] Gas [ X ] Liquid [ ] Solid
<b>Appearance and Odor:</b>	Appearance: Water. White. Liquid. Odor: Slight. hydrocarbon-like.
<b>pH:</b>	NA
<b>Freezing Point:</b>	No data.
<b>Boiling Point:</b>	-127 F (-88.3 C)
<b>Flash Pt:</b>	-211 F (-135 C) Method Used: Estimate
<b>Evaporation Rate:</b>	NA
<b>Flammability (solid, gas):</b>	Extremely flammable gas.
<b>Explosive Limits:</b>	LEL: 2.9% (V) UEL: 13% (V)
<b>Vapor Pressure (vs. Air or mm Hg):</b>	28952 MM_HG at 21.0 C (69.8 F)
<b>Vapor Density (vs. Air = 1):</b>	1.05 at 15.6 C (60.1 F)

<b>Specific Gravity (Water = 1):</b>	0.377	at	15.6 C (60.1 F)
<b>Density:</b>	NA		
<b>Solubility in Water:</b>	Negligible	at	0 C (32.0 F)
<b>Saturated Vapor Concentration:</b>	NA		
<b>Octanol/Water Partition Coefficient:</b>	No data.		
<b>Percent Volatile:</b>	100 % by volume.		
<b>Autoignition Pt:</b>	NA		
<b>Decomposition Temperature:</b>	No data.		
<b>Viscosity:</b>	NA		

## 10. STABILITY AND REACTIVITY

<b>Reactivity:</b>	Not reactive at normal temperatures and pressures. May produce explosion with chlorine.
<b>Stability:</b>	Unstable [ ] Stable [ X ]
<b>Conditions To Avoid - Instability:</b>	Extremes of temperature and direct sunlight. Ignition sources, Incompatible materials, Contains gas under pressure; may explode if heated.
<b>Incompatibility - Materials To Avoid:</b>	Strong acids, Strong bases, Strong oxidizers, Halogenated compounds, fluorine, chlorine.
<b>Hazardous Decomposition or Byproducts:</b>	High temperatures and fire conditions can result in the formation of carbon monoxide and carbon dioxide, hydrogen gas, and unburned hydrocarbons.
<b>Possibility of Hazardous Reactions:</b>	Will occur [ ] Will not occur [ X ]
<b>Conditions To Avoid - Hazardous Reactions:</b>	No data available.

## 11. TOXICOLOGICAL INFORMATION

<b>Toxicological Information:</b>	Epidemiology: No information available. Teratogenicity: No information available. Reproductive Effects: No information available. Mutagenicity: No information available. Neurotoxicity: No information available.
	Acute Toxicity: CAS# 74-84-0 LC50, Inhalation, Rat, 658 mg/l, 4h
	CAS# 74-98-6 LC50, Inhalation, Rat, 658 mg/l, 4h
<b>Irritation or Corrosion:</b>	No data available.
<b>Symptoms related to Toxicological Characteristics:</b>	Contact with gas/liquid escaping the container: May cause frostbite or freeze burns. May cause permanent damage. In elevated concentrations, may cause asphyxiation, central nervous system effects and increased breathing rate. Symptoms of asphyxia include headache, dizziness, rapid breathing, increased pulse, mood changes, tremors, cyanosis, muscular weakness, narcosis, numbness of the extremities, unconsciousness and death.
<b>Chronic Toxicological Effects:</b>	No data available.
<b>Carcinogenicity:</b>	NTP? No      IARC Monographs? No      OSHA Regulated? No

**12. ECOLOGICAL INFORMATION**

<b>General Ecological Information:</b>	Environmental: No information available. Physical: No information available.
<b>Results of PBT and vPvB assessment:</b>	No data available.
<b>Persistence and Degradability:</b>	Not expected.
<b>Bioaccumulative Potential:</b>	Not expected.
<b>Mobility in Soil:</b>	No data available.

**13. DISPOSAL CONSIDERATIONS**

**Waste Disposal Method:** Dispose of contents and containers in accordance with local, regional, national, and international regulations.

Additional Information: Container may remain hazardous when empty. Continue to observe all precautions. Handle empty containers with care because residual vapors are flammable. Empty gas cylinders should be returned to the vendor for recycling or refilling. Do not puncture or incinerate container. Do not pressurize, cut, or weld containers.

Ecology - Waste Materials: Avoid release to the environment.

**14. TRANSPORT INFORMATION****LAND TRANSPORT (US DOT):**

**DOT Proper Shipping Name:** Ethane, Refrigerated Liquid.  
**DOT Hazard Class:** 2.1 FLAMMABLE GAS  
**UN/NA Number:** UN1961  
**Precautionary Label:** ERG Number: 115

**MARINE TRANSPORT (IMDG/IMO):**

**IMDG/IMO Shipping Name:** Ethane, Refrigerated Liquid.  
**UN Number:** 1961  
**Hazard Class:** 2.1 - FLAMMABLE GAS  
**IMDG EMS Number:** F-D, S-U  
**IMDG EMS Page:**

**Packing Group:**  
**IMDG MFAG Number:**

**AIR TRANSPORT (ICAO/IATA):**

**ICAO/IATA Shipping Name:** Ethane, Refrigerated Liquid.  
**UN Number:** 1961  
**Hazard Class:** 2.1 - FLAMMABLE GAS

**Additional Transport Information:** IATA ERG Code - 10L.

## 15. REGULATORY INFORMATION

## EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
74-84-0	Ethane	No	No	No
74-82-8	Methane	No	No	No
74-98-6	Propane	No	No	No

## EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
74-84-0	Ethane	TSCA: Yes - Inventory; CA PROP.65: No; CA TAC, Title 8: No; MA Oil/HazMat: Yes; MI CMR, Part 5: No; NC TAP: No; NJ EHS: Yes - 0834; NY Part 597: No; PA HSL: Yes - 1; SC TAP: No; WI Air: No
74-82-8	Methane	TSCA: Yes - Inventory; CA PROP.65: No; CA TAC, Title 8: No; MA Oil/HazMat: Yes; MI CMR, Part 5: No; NC TAP: No; NJ EHS: Yes - 1202; NY Part 597: No; PA HSL: Yes - 1; SC TAP: No; WI Air: No
74-98-6	Propane	TSCA: Yes - Inventory; CA PROP.65: No; CA TAC, Title 8: No; MA Oil/HazMat: Yes; MI CMR, Part 5: No; NC TAP: No; NJ EHS: Yes - 1594; NY Part 597: No; PA HSL: Yes - 1; SC TAP: No; WI Air: No

## EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	International Regulatory Lists
74-84-0	Ethane	Canadian DSL: Yes; Canadian NDSL: No; Mexico INSQ: Yes - 1035; Australia ICS: Yes; New Zealand IOC: Yes; China IECSC: Yes; Japan ENCS: Yes - 2-2; Korea ECL: Yes - KE-13138; Philippines ICCS: Yes; REACH: Yes - 01-2119486765-21: Full, (P)
74-82-8	Methane	Canadian DSL: Yes; Canadian NDSL: No; Mexico INSQ: Yes - 1971; Australia ICS: Yes; New Zealand IOC: Yes; China IECSC: Yes; Japan ENCS: Yes - 9-1726; Korea ECL: Yes - KE-23181; Philippines ICCS: Yes; REACH: Yes - 01-2119474442-39: Full, (P)
74-98-6	Propane	Canadian DSL: Yes; Canadian NDSL: No; Mexico INSQ: Yes - 1075; Australia ICS: Yes; New Zealand IOC: Yes; China IECSC: Yes; Japan ENCS: Yes - 9-1697; Korea ECL: Yes - KE-29258; Philippines ICCS: Yes; REACH: Yes - 01-2119486944-21: Full, (P)

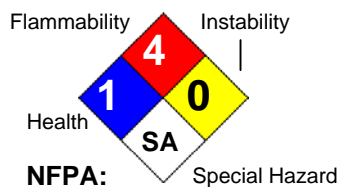
**Regulatory Information:** SARA Section 311/312 Hazard Classes:  
Fire hazard  
Sudden release of pressure hazard  
Immediate (acute) health hazard.

## 16. OTHER INFORMATION

Revision Date: 12/13/2018  
Preparer Name: Crystal Maira

Hazard Rating System:	HEALTH	1
	FLAMMABILITY	4
	PHYSICAL	3
	PPE	

HMIS:



Additional Information: 12/13/2018 Updated sections 2, 4, 5, 8, 10, 11, 13, 14, 15, 16

NFPA Health Hazard: 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA Fire Hazard: 4 - Materials that rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and burn readily.

NFPA Reactivity Hazard: 0 - Material that in themselves are normally stable, even under fire conditions.

NFPA Specific Hazards: SA -- This denotes gases which are simple asphyxiants.

HMIS III Ratings:

Health: 1 - Slight Hazard 0 irritation or minor reversible injury possible

Flammability: 4 - Severe Hazard

Physical: 3 - Serious Hazard.

**Company Policy or  
Disclaimer:**

The information, recommendations, and suggestions herein were compiled from reference material and other sources believed to be reliable. However, the SDS'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 or fitness for a particular purpose are expressed or implied. This SDS is not intended as a license to operate under, or a recommendation to infringe on, any patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.