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Supersedes Revision: 10/27/2014

1. PRODUCT AND COMPANY IDENTIFICATION

Product Code: 00015

Product Name: Liquid Ethylene

Company Name: Gas Innovations
18005 E Hwy 225
La Porte TX 77571

Phone Number: +1 (281)471-2200

Web site address: www.gasinnovations.corn

Emergency Contact: 3E (within United States) +1 (866)303-2640

Information: Infotrac (outside of United States) +1 (352)323-3500

2. HAZARDS IDENTIFICATION

Flammable Gases, Category 1
Gas Under Pressure, Liquefied gas
Specific Target Organ Toxicity (single exposure), Category 3

GHS Signal Word: **Danger**

GHS Hazard Phrases:
H220 - Extremely flammable gas.
H280 - Containers gas under pressure; may explode if heated.
H336 - May cause drowsiness or dizziness. May displace oxygen and cause rapid suffocation.

GHS Precaution Phrases:
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P261 - Avoid breathing gas/vapors.
P271 - Use only outdoors or in a well-ventilated area

GHS Response Phrases:
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 - Eliminate all ignition sources if safe to do so.
P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON CENTER or doctor/physician if you feel unwell.

GHS Storage:
P410+403 - Protect from sunlight and store in well-ventilated place. P403+233 - Store container tightly closed in well-ventilated place. P405 – Store locked up.

GHS Disposal:
P501 - Dispose of contents/containers to an appropriate treatment and disposal facility in accordance with applicable law local/regional/national/international regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC)
None Known

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS#	Hazardous Components (Chemical Name)	Concentration
74-85-1	Ethylene	100 %

4. FIRST AID MEASURES

Emergency and First Aid Procedures:

In Case of Inhalation: Move to fresh air. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

In Case of Skin Contact: Contact with evaporating liquid may cause freeze injury. DO NOT USE HOT WATER. Get medical attention.

In Case of Eye Contact: Contact with evaporating liquid may cause freeze injury. DO NOT USE HOT WATER. Flush eyes and skin with warm water. Get medical attention.

In Case of Ingestion: Not likely, due to form of the product.

Most important Symptoms and effects, both acute and delayed: Narcotic effect

Hazard and Treatment: Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Treat symptomatically.

5. FIRE FIGHTING MEASURES

General fire hazards: Extremely flammable liquid and gas – may cause flash fire. Stop flow of gas. Allow gas to burn if flow cannot be shut off immediately. Apply water from safe distance to cool container and protect surrounding area. USE WATER WITH CAUTION. Material will float and may ignite.

Extinguishing media Suitable extinguishing media: Water spray. Dry chemical. Carbon Dioxide. Foam.

Unsuitable extinguishing media: No data available.

Special hazard arising from the substance or mixture: Gas may cause a flash fire or ignite explosively. Gas may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations. Fire or excessive heat may result in rupture of container due to release of significant amounts of gases. Fire or excessive heat may result in rupture of container due to bulk polymerization. Heating may cause an explosion.

Advices for firefighters Special firefighting procedures: Fight fire from a protected location. Water may be ineffective in fighting the fire.

Special protective equipment for fire-fighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. ACCIDENTAL RELEASE MEASURES

Protective Precautions, protective equipment and emergency procedures: Wear appropriate personal protective equipment.

Environmental Precautions: Avoid release to the environment.

Methods and material for Containment and cleaning Up: Evacuate area. Ventilate well, stop flow of gas or liquid if possible. Remove ignition sources. Do not allow chemical to enter confined spaces such as sewers due to explosion risk. Sewers designed to preclude formation of explosive concentrations of vapor may be permit Use water spray to protect workers attempting to stop leak. Prevent runoff from entering drains, sewers or streams.

7. HANDLING AND STORAGE

Precautions To Be Taken Handling: Avoid contact with eyes, skin, and clothing. Avoid breathing gas. Use only with adequate ventilation. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities: Keep away from heat. Store in a cool place. Protect from contamination. Protect from light. Contents under pressure. Do not puncture or incinerate container. Do not expose to heat. Do not enter storage area unless it is adequately ventilated. Keep container tightly closed in cool, well ventilated place. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

Specific end use(s): Chemical Intermediate

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters Occupational exposure limits Country specific exposure limits have not been established or are not applicable unless listed below.

Chemical Name	Type	Exposure Limit values	Source
ethylene	TWA	200 ppm	US. ACGIH Threshold Limit Values (01 2010)

Exposure controls Appropriate engineering controls: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

General Information: Eye bath. Washing facilities. Safety shower.

Eye/face Protection: Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.

Skin protection Hand protection: Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

Other: No data available.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits or to an acceptable level, an approved respirator must be worn. In the USA, if respirator are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1198. Respiratory type: Air-purifying respirator with an appropriate, government approved air purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

Hygiene measures: Observe good industrial hygiene practices

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical States:	Liquid
Appearance and Odor:	Appearance: colorless. Odor: sweetish odor.
Freezing Point:	-169 C
Boiling Point:	-104 C
Autoignition Pt:	450 C (ASTM D286-36)
Flash Pt:	-136 C Method Used: Unknown
Flammable Limits:	LEL: 2.7 %(V) UEL: 36 %(V)
Specific Gravity (Water = 1):	1.26 at 0 C
Density:	NA
Vapor Pressure (vs. Air or mm Hg):	40,432 MBAR at -1.5 C
Vapor Density (vs. Air = 1):	1.0
Evaporation Rate:	NA
Solubility in Water:	Negligible
Saturated Vapor Concentration:	NA No data
Viscosity:	NA
pH:	NA
Percent Volatile:	No data

10. STABILITY AND REACTIVITY

Stability:	Stable
Conditions To Avoid - Instability:	Heat, flames and sparks. High pressure.
Incompatibility Materials:	Strong oxidizing agents, Polymerization initiators. Accelerators contamination Chlorine
Hazardous Decomposition products:	Carbon monoxide. Carbon Dioxide
Possibility of Hazardous Reactions:	Hazardous Polymerization
Conditions To Avoid - Hazardous Reactions:	No data No data

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure Inhalation	May cause drowsiness or dizziness. Gas reduces oxygen available for breathing.
Ingestion:	None Known
Skin Contact:	Contact with evaporating liquid may cause frostbite or freezing of skin.
Eye Contact:	None Known
Toxicological Effect Acute Toxicity Oral Product:	No data available

Specified substance(s)
ethylene No data available

Dermal Product: No data available
Specified substance(s) No data available
ethylene

Inhalation Product: No data available
Specified substance(s) No data available
ethylene

Repeated dose toxicity No data available
Product: No data available
Specified substance(s)
ethylene

Skin corrosion/irritation No data available
Product: No data available
Specified substance(s)
ethylene

Serious eye damage/eye No data available
Product: No data available
Specified substance(s)
ethylene

Respiratory or skin No data available
sensitization Product: No data available
Specified substance(s)
ethylene

Serious eye damage/eye No data available
Product: No data available
Specified substance(s)
ethylene

Mutagenicity No data available

In vitro Product: No data available
Specified substance(s)
Ethylene

In vivo Product: No data available
Specified substance(s) No data available
ethylene

Carcinogenicity No data available
Product: No data available
Specified substance(s)
ethylene

Reproductive No data available
toxicity Product: No data available
Specified substance(s)
ethylene

Specified target organ No data available
toxicity- single exposure No data available
Product:
Specified substance(s)
ethylene

Aspiration hazard Product: No data available
Specified substance(s) No data available
ethylene

12. ECOLOGICAL INFORMATION

Toxicity No data available

Acute toxicity
Fish Product: No data available
Specified substance(s) No data available
ethylene

Aquatic invertebrates Product:
Specified substance(s) No data available
ethylene No data available

Chronic toxicity
Fish Product: No data available
Specified substance(s) No data available
ethylene

Aquatic invertebrates Product: No data available
Specified substance(s) No data available
ethylene

Toxicity to Aquatic Plants No data available
Product: No data available
Specified substance(s)
ethylene

Persistence and degradability No data available

Biodegradation Product: No data available
Specified substance(s) No data available
ethylene

Biological Oxygen Demand No data available
Product: No data available
Specified substance(s)
ethylene

Chemical Oxygen Demand No data available
Product: No data available
Specified substance(s)
ethylene

BOD/COD Product: No data available
Specified substance(s) No data available
ethylene

Bioaccumulative potential No data available
Product: No data available
Specified substance(s)
ethylene No data available

Mobility in soil: No data available
ethylene

Results of PBT and vPvB No data available
assessment: No data available
ethylene:

Other adverse effects No data available

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

General Information: No Data Available

Waste Disposal Method: Discharge, treatment, or disposal may be subject to national, state, or local laws. Contract with a licensed chemical disposal agency. Since emptied containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, grind, or weld on or near this container

14. TRANSPORT INFORMATION

Important Note: Shipping descriptions may vary based on made of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.

DOT

Possible Shipping Description(s):

UN 1038 Ethylene, REFRIGERATED LIQUID 2.1

IMDG – International Maritime Dangerous Goods Code

Possible Shipping Description(s):

UN 1038 Ethylene, REFRIGERATED LIQUID 2.1

IATA

Class forbidden on passenger aircraft

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture:

This product has been classified in accordance with hazard criteria of Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.
WHMIS (Canada) Status: controlled
WHMIS (Canada) Hazard Classification: A, B/1, D/2/B

SARA 311-312 Hazard Classification(s):
Immediate (acute) health hazard
Fire hazard
Reactive hazard
Sudden release of Pressure

US EPCRA (SARA Title III) Section 313 – Toxic Chemical List
ETHYLENE

OSHA: hazardous

TSCA (US Toxic Substances Control Act): This product is listed on TSCA inventory. Any impurities present in this product are exempt from listing.

DSL (Canadian Domestic Substances List) and CEPA (Canadian Environmental Protection Act): This product is listed on the DSL or otherwise complies with CEPA new substances notification requirements.

AICS / NICNAS (Australian Inventory of Chemical Substances and National Industrial Chemicals Notification and Assessment Scheme): This product is listed on AICS or otherwise complies with NICNAS.

MITI (Japanese Handbook of Existing and New Chemical Substances): This product is listed in the Handbook or has been approved in Japan by new substance notification.

16. OTHER INFORMATION

HMIS® Hazard Ratings: Health – 1, Flammability-4, Chemical Reactivity – 2

HMIS® rating involves data interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

Revision Information:	Not relevant
Key literature references and sources for data:	No data available
Training Information:	No data available
Issue date:	10/27/2014
SDS No.:	
Disclaimer	This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.