

**SECTION 1: IDENTIFICATION****1.1. Product Identifier****Product Form:** Substance**Product Name:** Ethylene**Synonyms:** Ethene, Olefiant Gas, Alkene**1.2. Intended Use of the Product****Use of the substance/mixture:** Olefiant Gas**1.3. Name, Address, and Telephone of the Responsible Party****Company**

MarkWest Energy Partners, L.P.

1515 Arapahoe Street

Tower 1, Suite 1600

Denver, Colorado 80202-2126

800-730-8388

[www.markwest.com](http://www.markwest.com)**1.4. Emergency Telephone Number****Emergency Number** : 800-730-8388, 800-424-9300 (CHEMTREC)**SECTION 2: HAZARDS IDENTIFICATION****2.1. Classification of the Substance or Mixture****Classification (GHS-US)**

Simple Asphy

Flam. Gas 1 H220

Compressed gas H280

STOT SE 3 H336

Full text of H-phrases: see section 16

**2.2. Label Elements****GHS-US Labeling****Hazard Pictograms (GHS-US)****Signal Word (GHS-US)**

: Danger

**Hazard Statements (GHS-US)**

: H220 - Extremely flammable gas.

H280 - Contains gas under pressure; may explode if heated.

H336 - May cause drowsiness or dizziness.

Simple Asphy - May displace oxygen and cause rapid suffocation.

**Precautionary Statements (GHS-US)**

: P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking.

P261 - Avoid breathing vapors, mist, or spray.

P271 - Use only outdoors or in a well-ventilated area.

P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.

P312 - Call a poison center or doctor if you feel unwell.

P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381 - Eliminate all ignition sources if safe to do so.

P233+P405 - Keep container tightly closed. Store locked up.

P410+P403 - Protect from sunlight. Store in a well-ventilated place.

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

**2.3. Other Hazards**

No additional information available

**2.4. Unknown Acute Toxicity (GHS-US)**

No data available

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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substance

Name : Ethylene

Name	Product Identifier	%	Classification (GHS-US)
Ethylene	(CAS No) 74-85-1	100	Simple Asphy Flam. Gas 1, H220 Compressed gas, H280 STOT SE 3, H336

Full text of H-phrases: see section 16

### 3.2. Mixture

Not applicable

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of First Aid Measures

**First-aid Measures General:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

**First-aid Measures After Inhalation:** When symptoms occur: go into open air and ventilate suspected area. Immediately call a POISON CENTER or doctor/physician.

**First-aid Measures After Skin Contact:** If frostbite or freezing occurs, immediately flush with plenty of lukewarm water to GENTLY warm the affected area. Do not use hot water. Do not rub affected area. Get immediate medical attention.

**First-aid Measures After Eye Contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

**First-aid Measures After Ingestion:** Do not induce vomiting. Immediately call a POISON CENTER or doctor/physician.

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

**Symptoms/Injuries:** Gas can be toxic as a simple asphyxiant by displacing oxygen from the air. Compressed gases may create low temperatures when they expand rapidly. Leaks and uses that allow rapid expansion may cause a frostbite hazard. May cause drowsiness and dizziness.

**Symptoms/Injuries After Inhalation:** Asphyxiant gas. May cause drowsiness or dizziness.

**Symptoms/Injuries After Skin Contact:** May cause frostbite.

**Symptoms/Injuries After Eye Contact:** Contact with the liquefied gas causes frostbite.

**Symptoms/Injuries After Ingestion:** Ingestion is an unlikely route of exposure for a gas.

### 4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention.

## SECTION 5: FIRE-FIGHTING MEASURES

### 5.1. Extinguishing Media

**Suitable Extinguishing Media:** Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO<sub>2</sub>).

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

### 5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Extremely flammable gas.

**Explosion Hazard:** Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

**Reactivity:** Ethylene may polymerize to form aromatic compounds under the influence of temperatures above 600 °C (1112 °F). Reacts with strong oxidants causing fire and explosion hazard.

### 5.3. Advice for Firefighters

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Use special care to avoid static electric charges. Keep away from open flames, hot surfaces and sources of ignition. No smoking. Do not get in eyes, on skin, or on clothing. Do not breathe gas.

#### 6.1.1. For Non-emergency Personnel

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel. Eliminate ignition sources.

#### 6.1.2. For Emergency Responders

**Protective Equipment:** Equip cleanup crew with proper protection.

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**Emergency Procedures:** 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.

## 6.2. Environmental Precautions

Avoid release to the environment.

## 6.3. Methods and Material for Containment and Cleaning Up

**For Containment:** Stop leak without risks if possible.

**Methods for Cleaning Up:** Contact competent authorities after a spill.

## 6.4. Reference to Other Sections

See Section 8, Exposure Controls and Personal Protection. See Section 13, Disposal Considerations.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for Safe Handling

**Precautions for Safe Handling:** Personnel should be trained to regularly inspect equipment such as pumps, hoses, and valves. Do not breathe gas. Ensure there is adequate ventilation. Close valve after each use and when empty. Open valve slowly to avoid pressure shock.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

### 7.2. Conditions for Safe Storage, Including Any Incompatibilities

**Technical Measures:** Comply with applicable regulations. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Keep at temperatures below 52°C / 125°F.

**Storage Conditions:** Store in a dry, cool and well-ventilated place. Keep in fireproof place. Store locked up.

**Incompatible Products:** Heat sources. Oxidizers.

**Special Rules on Packaging:** Store in containers fitted with suitable release valve.

### 7.3. Specific End Use(s) Olefiant Gas

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), or OSHA (PEL).

Ethylene (74-85-1)		
USA ACGIH	ACGIH TWA (ppm)	200 ppm
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen

### 8.2. Exposure Controls

#### Appropriate Engineering Controls

: Gas detectors should be used when toxic gases may be released. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

#### Personal Protective Equipment

: Gas mask. Protective goggles. Gloves. Protective clothing.



#### Materials for Protective Clothing

: Chemically resistant materials and fabrics.

#### Hand Protection

: Wear working gloves when handling gas containers.

#### Eye Protection

: Safety glasses.

#### Skin and Body Protection

: Wear suitable protective clothing.

#### Respiratory Protection

: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements and NIOSH standards. For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

#### Thermal Hazard Protection

: Wear cold insulating gloves.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on Basic Physical and Chemical Properties

**Physical State** : Gas

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<b>Appearance</b>	: Clear, colorless gas.
<b>Odor</b>	: Sweet.
<b>Odor Threshold</b>	: No data available
<b>pH</b>	: No data available
<b>Evaporation Rate</b>	: No data available
<b>Melting Point</b>	: -169 °C (-272.2 °F)
<b>Freezing Point</b>	: No data available
<b>Boiling Point</b>	: -104 °C (-155.2 °F)
<b>Flash Point</b>	: -136 °C (-212.8 °F)
<b>Auto-ignition Temperature</b>	: No data available
<b>Decomposition Temperature</b>	: No data available
<b>Flammability (solid, gas)</b>	: No data available
<b>Vapor Pressure</b>	: 42700 hPa (at 0 °C)
<b>Relative Vapor Density at 20 °C</b>	: No data available
<b>Relative Density</b>	: 0.98
<b>Specific Gravity</b>	: 0.61
<b>Specific gravity / density</b>	: 0.974 g/cm <sup>3</sup> (at 15 °C)
<b>Solubility</b>	: No data available
<b>Partition Coefficient: N-Octanol/Water</b>	: No data available
<b>Viscosity</b>	: No data available

**9.2. Other Information** No additional information available

## SECTION 10: STABILITY AND REACTIVITY

- 10.1. Reactivity:** Ethylene may polymerize to form aromatic compounds under the influence of temperatures above 600 °C (1112 °F). Reacts with strong oxidants causing fire and explosion hazard.
- 10.2. Chemical Stability:** Stable under recommended handling and storage conditions (see section 7).
- 10.3. Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4. Conditions to Avoid:** Direct sunlight. Extremely high or low temperatures. Open flame. Heat. Sparks.
- 10.5. Incompatible Materials:** Heat. Strong oxidizers.
- 10.6. Hazardous Decomposition Products:** Carbon oxides (CO, CO<sub>2</sub>).

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information On Toxicological Effects

**Acute Toxicity:** Not classified

**Skin Corrosion/Irritation:** Not classified

**Serious Eye Damage/Irritation:** Not classified

**Respiratory or Skin Sensitization:** Not classified

**Germ Cell Mutagenicity:** Not classified

**Carcinogenicity:** Not classified

### Ethylene (74-85-1)

<b>IARC group</b>	3
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**Reproductive Toxicity:** Not classified

**Specific Target Organ Toxicity (Single Exposure):** May cause drowsiness or dizziness.

**Specific Target Organ Toxicity (Repeated Exposure):** Not classified

**Aspiration Hazard:** Not classified

**Symptoms/Injuries After Inhalation:** Asphyxiant gas. May cause drowsiness or dizziness.

**Symptoms/Injuries After Skin Contact:** May cause frostbite.

**Symptoms/Injuries After Eye Contact:** Contact with the liquefied gas causes frostbite.

**Symptoms/Injuries After Ingestion:** Ingestion is an unlikely route of exposure for a gas.

## SECTION 12: ECOLOGICAL INFORMATION

**12.1. Toxicity** No additional information available

**12.2. Persistence and Degradability** No additional information available

**12.3. Bioaccumulative Potential**

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<b>Ethylene (74-85-1)</b>	
<b>BCF fish 1</b>	4 - 4.6
<b>Log Pow</b>	0.053

**12.4. Mobility in Soil** No additional information available

**12.5. Other Adverse Effects**

No additional information available

## SECTION 13: DISPOSAL CONSIDERATIONS

**13.1. Waste treatment methods**

**Waste Disposal Recommendations:** Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

**Additional Information:** Empty product containers may contain hazardous residue. Do not reuse empty containers without commercial cleaning or reconditioning.

## SECTION 14: TRANSPORT INFORMATION

**14.1. In Accordance with DOT**

**Proper Shipping Name** : ETHYLENE

**Hazard Class** : 2.1

**Identification Number** : UN1962

**Label Codes** : 2.1

**ERG Number** : 116P



**14.2. In Accordance with IMDG**

**Proper Shipping Name** : ETHYLENE

**Hazard Class** : 2

**Identification Number** : UN1962

**Label Codes** : 2.1

**EmS-No. (Fire)** : F-D

**EmS-No. (Spillage)** : S-U



**14.3. In Accordance with IATA**

**Proper Shipping Name** : ETHYLENE

**Identification Number** : UN1962

**Hazard Class** : 2

**Label Codes** : 2.1

**ERG Code (IATA)** : 10A



## SECTION 15: REGULATORY INFORMATION

**15.1 US Federal Regulations**

<b>Ethylene</b>	
<b>SARA Section 311/312 Hazard Classes</b>	Immediate (acute) health hazard Fire hazard Sudden release of pressure hazard

<b>Ethylene (74-85-1)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on United States SARA Section 313	
<b>SARA Section 313 - Emission Reporting</b>	1.0 %

**15.2 US State Regulations**

<b>Ethylene (74-85-1)</b>	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List	
U.S. - Pennsylvania - RTK (Right to Know) List	

## SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

**Revision Date** : 04/14/2016

**Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

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### GHS Full Text Phrases:

Compressed gas	Gases under pressure Compressed gas
Flam. Gas 1	Flammable gases Category 1
Simple Asphy	Simple Asphyxiant
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H220	Extremely flammable gas
H280	Contains gas under pressure; may explode if heated
H336	May cause drowsiness or dizziness

NFPA Health Hazard

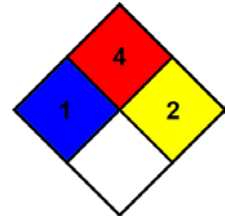
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

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 Hazard

: 2 - Normally unstable and readily undergo violent decomposition but do not detonate. Also: may react violently with water or may form potentially explosive mixtures with water.



*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

SDS US (GHS HazCom)