

## SECTION 1: IDENTIFICATION

### 1.1. Product Identifier

**Product Form:** Mixture

**Product Name:** Wellhead Natural Gas

**Synonyms:** Raw Gas

### 1.2. Intended Use of the Product

**Use of the substance/mixture:** Hydrocarbon

### 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 H380

Flam. Gas 1 H220

Compressed gas H280

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.

H380 - May displace oxygen and cause rapid suffocation.

#### Precautionary Statements (GHS-US)

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

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

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

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

### 2.3. Other Hazards

Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions. Contains a small amount of hydrogen sulfide. Hydrogen sulfide is a fatal, and highly flammable gas with a rotten egg odor that quickly causes odor fatigue. Heating of this product and storage under elevated temperatures or over long periods of time may release higher amounts of hydrogen sulfide. Hydrogen sulfide is also an asphyxiant.

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

No data available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product Identifier	%	Classification (GHS-US)
Methane	(CAS No) 74-82-8	> 75	Simple Asphy, H380 Flam. Gas 1, H220 Compressed gas, H280

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Ethane	(CAS No) 74-84-0	< 20	Simple Asphy, H380 Flam. Gas 1, H220 Liquefied gas, H280
Propane	(CAS No) 74-98-6	< 10	Simple Asphy, H380 Flam. Gas 1, H220 Liquefied gas, H280
Carbon dioxide	(CAS No) 124-38-9	< 10	Simple Asphy, H380 Compressed gas, H280
Butane	(CAS No) 106-97-8	< 5	Simple Asphy, H380 Flam. Gas 1, H220 Liquefied gas, H280
Nitrogen	(CAS No) 7727-37-9	< 5	Simple Asphy, H380 Compressed gas, H280
Hydrogen sulfide	(CAS No) 7783-06-4	< 0.0004	Flam. Gas 1, H220 Liquefied gas, H280 Acute Tox. 2 (Inhalation:gas), H330 Eye Irrit. 2A, H319 STOT SE 3, H335 Aquatic Acute 1, H400

## 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). 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 Inhalation:** When symptoms occur: go into open air and ventilate suspected area. Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell.

**First-aid Measures After Skin Contact:** Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation persists. Thaw frosted parts with lukewarm water. Do not rub affected area.

**First-aid Measures After Eye Contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation persists.

**First-aid Measures After Ingestion:** Rinse mouth. Do NOT induce vomiting. Get immediate medical attention.

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

**Symptoms/Injuries:** May cause frostbite on contact with the liquid. Natural Gas is an asphyxiant. Lack of oxygen can be fatal.

**Symptoms/Injuries After Inhalation:** Gas can be toxic as a simple asphyxiant by displacing oxygen from the air. Asphyxia by lack of oxygen: risk of death. May cause drowsiness or dizziness.

**Symptoms/Injuries After Skin Contact:** Contact with the liquid may cause cold burns/frostbite.

**Symptoms/Injuries After Eye Contact:** This gas is non-irritating; but direct contact with liquefied/pressurized gas or frost particles may produce severe and possibly permanent eye damage from freeze burns.

**Symptoms/Injuries After Ingestion:** Ingestion is not considered a potential route of exposure. Non-irritating, but solid and liquid forms of this material and pressurized gas may cause freeze burns.

**Chronic Symptoms:** Contains a small amount of Hydrogen Sulfide, symptoms of chronic exposure that may manifest as long-term or permanent effects are: headaches, dizziness, nausea, coughing, respiratory irritation, eye irritation, skin irritation, pain in the nose, and loss of consciousness.

### 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:** Do not extinguish burning gas if flow cannot be shut off immediately. Extinguish secondary FIRES with appropriate materials.

**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:** May form flammable/explosive vapor-air mixture. Heating may cause an explosion. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

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**Reactivity:** Hazardous reactions will not occur under normal conditions.

## 5.3. Advice for Firefighters

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

**Firefighting Instructions:** Leaking gas fire: Do not extinguish, unless leak can be stopped safely. In case of leaking gas fire, eliminate all ignition sources if safe to do so. Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

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

**Other Information:** Do not allow run-off from fire fighting to enter drains or water courses.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

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

**General Measures:** Use special care to avoid static electric charges. Eliminate every possible source of ignition. Keep away from extremely high or low temperatures, ignition sources, and incompatible materials. - No smoking. Avoid breathing (vapor, mist, gas) . Use only outdoors or in a well-ventilated area. Ruptured cylinders may rocket. Do not allow product to spread into the environment.

#### 6.1.1. For Non-emergency Personnel

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

**Emergency Procedures:** Evacuate unnecessary personnel.

#### 6.1.2. For Emergency Responders

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

**Emergency Procedures:** Ventilate area.

### 6.2. Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

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

**For Containment:** If possible, stop flow of product. Use only non-sparking tools.

**Methods for Cleaning Up:** Clean up spills immediately and dispose of waste safely. Isolate area until gas has dispersed. Use water spray to disperse vapors. For water based spills contact appropriate authorities and abide by local regulations for hydrocarbon spills into waterways. 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

**Additional Hazards When Processed:** Handle empty containers with care because residual vapors are flammable. Extremely flammable gas. Do not pressurize, cut, or weld containers. Do not puncture or incinerate container. Liquid gas can cause frost-type burns.

**Precautions for Safe Handling:** Keep away from heat, sparks, open flames, hot surfaces. - No smoking. Avoid breathing gas, spray. Use only outdoors or in a well-ventilated area.

**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. Do not eat, drink or smoke when using this product.

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

**Technical Measures:** Proper grounding procedures to avoid static electricity should be followed. Comply with applicable regulations. Use explosion proof equipment.

**Storage Conditions:** Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep in fireproof place. Keep container tightly closed. Keep/Store away from extremely high or low temperatures, ignition sources, direct sunlight, incompatible materials. Store in original container.

**Incompatible Products:** Strong acids. Strong bases. Strong oxidizers. Chlorine. Halogenated compounds.

**Incompatible Materials:** Heat sources. Direct sunlight. Heat. Sources of ignition.

### 7.3. Specific End Use(s)

## 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).

Methane (74-82-8)		
USA ACGIH	ACGIH TWA (ppm)	1000 ppm

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Ethane (74-84-0)		
USA ACGIH	ACGIH TWA (ppm)	1000 ppm
Propane (74-98-6)		
USA ACGIH	ACGIH TWA (ppm)	1000 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (TWA) (ppm)	1000 ppm
USA IDLH	US IDLH (ppm)	2100 ppm (10% LEL)
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
Carbon dioxide (124-38-9)		
USA ACGIH	ACGIH TWA (ppm)	5000 ppm
USA ACGIH	ACGIH STEL (ppm)	30000 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (TWA) (ppm)	5000 ppm
USA NIOSH	NIOSH REL (STEL) (mg/m <sup>3</sup> )	54000 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (STEL) (ppm)	30000 ppm
USA IDLH	US IDLH (ppm)	40000 ppm
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (ppm)	5000 ppm
Butane (106-97-8)		
USA ACGIH	ACGIH STEL (ppm)	1000 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (TWA) (ppm)	800 ppm
Nitrogen (7727-37-9)		
USA ACGIH	ACGIH chemical category	Simple asphyxiant See Appendix F: Minimal Oxygen Content
Hydrogen sulfide (7783-06-4)		
USA ACGIH	ACGIH TWA (ppm)	1 ppm
USA ACGIH	ACGIH STEL (ppm)	5 ppm
USA NIOSH	NIOSH REL (ceiling) (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (ceiling) (ppm)	10 ppm
USA IDLH	US IDLH (ppm)	100 ppm
USA OSHA	OSHA PEL (Ceiling) (ppm)	20 ppm

## 8.2. Exposure Controls

### Appropriate Engineering Controls

: Gas detectors should be used when flammable gases/vapors may be released. Ensure adequate ventilation, especially in confined areas. Proper grounding procedures to avoid static electricity should be followed. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use explosion-proof equipment.

### Personal Protective Equipment

: Protective goggles. Protective clothing. Respiratory protection of the dependent type. Insulated gloves.



### Materials for Protective Clothing

: Chemically resistant materials and fabrics. Wear fire/flame resistant/retardant clothing.

### Hand Protection

: Wear chemically resistant protective gloves. Insulated gloves.

### Eye Protection

: Chemical goggles or face shield.

### Skin and Body Protection

: Wear suitable protective clothing.

### Respiratory Protection

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

### Other Information

: When using, do not eat, drink or smoke.

## 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
<b>Odor</b>	: Hydrocarbon
<b>Odor Threshold</b>	: No data available
<b>pH</b>	: No data available
<b>Evaporation Rate</b>	: No data available
<b>Melting Point</b>	: No data available
<b>Freezing Point</b>	: No data available
<b>Boiling Point</b>	: -157 °C (-251 °F)
<b>Flash Point</b>	: -187 °C (-305 °F)
<b>Auto-ignition Temperature</b>	: > 288 °C (> 550 °F)
<b>Decomposition Temperature</b>	: No data available
<b>Flammability (solid, gas)</b>	: Extremely flammable gas
<b>Vapor Pressure</b>	: 40 mm Hg @ 25 °C (77 °F)
<b>Relative Vapor Density at 20 °C</b>	: 0.6
<b>Relative Density</b>	: No data available
<b>Solubility</b>	: No data available
<b>Partition Coefficient: N-Octanol/Water</b>	: No data available
<b>Viscosity</b>	: No data available
<b>Lower Flammable Limit</b>	: 3 %
<b>Upper Flammable Limit</b>	: 17 %

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

## SECTION 10: STABILITY AND REACTIVITY

- 10.1. Reactivity:** Hazardous reactions will not occur under normal conditions.
- 10.2. Chemical Stability:** Extremely flammable gas. Stable under recommended handling and storage conditions.
- 10.3. Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4. Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, ignition sources, combustible materials, incompatible materials.
- 10.5. Incompatible Materials:** Strong acids. Strong bases. Strong oxidizers. Halogenated compounds. Chlorine.
- 10.6. Hazardous Decomposition Products:** Carbon oxides (CO, CO<sub>2</sub>). hydrocarbons. May release poisonous hydrogen sulfide.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information On Toxicological Effects

**Acute Toxicity:** Not classified

<b>Ethane (74-84-0)</b>	
<b>LC50 Inhalation Rat</b>	658 mg/l/4h
<b>Propane (74-98-6)</b>	
<b>LC50 Inhalation Rat</b>	658 mg/l/4h
<b>Butane (106-97-8)</b>	
<b>LC50 Inhalation Rat</b>	30957 mg/m <sup>3</sup> (Exposure time: 4 h)
<b>Hydrogen sulfide (7783-06-4)</b>	
<b>LC50 Inhalation Rat</b>	0.99 mg/l (Exposure time: 1 h)
<b>LC50 Inhalation Rat</b>	444 ppm/4h

**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

**Reproductive Toxicity:** Not classified

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

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

**Aspiration Hazard:** Not classified

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**Symptoms/Injuries After Inhalation:** Gas can be toxic as a simple asphyxiant by displacing oxygen from the air. Asphyxia by lack of oxygen: risk of death. May cause drowsiness or dizziness.

**Symptoms/Injuries After Skin Contact:** Contact with the liquid may cause cold burns/frostbite.

**Symptoms/Injuries After Eye Contact:** This gas is non-irritating; but direct contact with liquefied/pressurized gas or frost particles may produce severe and possibly permanent eye damage from freeze burns.

**Symptoms/Injuries After Ingestion:** Ingestion is not considered a potential route of exposure. Non-irritating, but solid and liquid forms of this material and pressurized gas may cause freeze burns.

**Chronic Symptoms:** Contains a small amount of Hydrogen Sulfide, symptoms of chronic exposure that may manifest as long-term or permanent effects are: headaches, dizziness, nausea, coughing, respiratory irritation, eye irritation, skin irritation, pain in the nose, and loss of consciousness.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

Hydrogen sulfide (7783-06-4)	
LC50 Fish 1	0.0448 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [flow-through])
LC 50 Fish 2	0.016 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])

### 12.2. Persistence and Degradability

Wellhead Natural Gas	
Persistence and Degradability	Product is biodegradable.

### 12.3. Bioaccumulative Potential

Wellhead Natural Gas	
Bioaccumulative Potential	Not expected to bioaccumulate.
Ethane (74-84-0)	
Log Pow	<= 2.8
Propane (74-98-6)	
Log Pow	2.3
Carbon dioxide (124-38-9)	
BCF fish 1	(no bioaccumulation)
Log Pow	0.83
Butane (106-97-8)	
Log Pow	2.89
Hydrogen sulfide (7783-06-4)	
BCF fish 1	(no bioaccumulation expected)
Log Pow	0.45 (at 25 °C)

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

### 12.5. Other Adverse Effects

**Other Adverse Effects** : Can cause frost damage to vegetation.

**Other Information** : Avoid release to the environment.

## 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:** Handle empty containers with care because residual vapors are flammable. Empty gas cylinders should be returned to the vendor for recycling or refilling.

## SECTION 14: TRANSPORT INFORMATION

### 14.1. In Accordance with DOT

**Proper Shipping Name** : NATURAL GAS, COMPRESSED (with high methane content)  
**Hazard Class** : 2.1  
**Identification Number** : UN1971  
**Label Codes** : 2.1  
**ERG Number** : 115



### 14.2. In Accordance with IMDG

**Proper Shipping Name** : NATURAL GAS, COMPRESSED  
**Hazard Class** : 2

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**Identification Number** : UN1971  
**Label Codes** : 2.1  
**EmS-No. (Fire)** : F-D  
**EmS-No. (Spillage)** : S-U



### 14.3. In Accordance with IATA

**Proper Shipping Name** : NATURAL GAS, COMPRESSED  
**Identification Number** : UN1971  
**Hazard Class** : 2  
**Label Codes** : 2.1  
**ERG Code (IATA)** : 10L



## SECTION 15: REGULATORY INFORMATION

### 15.1 US Federal Regulations

<b>Wellhead Natural Gas</b>	
<b>SARA Section 311/312 Hazard Classes</b>	Fire hazard Immediate (acute) health hazard Sudden release of pressure hazard
<b>Methane (74-82-8)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Ethane (74-84-0)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Propane (74-98-6)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Carbon dioxide (124-38-9)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Butane (106-97-8)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Nitrogen (7727-37-9)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>SARA Section 311/312 Hazard Classes</b>	Immediate (acute) health hazard Sudden release of pressure hazard
<b>Hydrogen sulfide (7783-06-4)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on the United States SARA Section 302	
Listed on United States SARA Section 313	
<b>SARA Section 302 Threshold Planning Quantity (TPQ)</b>	500
<b>SARA Section 313 - Emission Reporting</b>	1.0 %

### 15.2 US State Regulations

<b>Methane (74-82-8)</b>
U.S. - Delaware - Accidental Release Prevention Regulations - Sufficient Quantities
U.S. - Delaware - Accidental Release Prevention Regulations - Threshold Quantities
U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
U.S. - Delaware - Volatile Organic Compounds Exempt from Requirements
U.S. - Maine - Air Pollutants - Greenhouse Gases (GHG)
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
RTK - U.S. - Massachusetts - Right To Know List
U.S. - Massachusetts - Volatile Organic Compounds Exempt From Requirements
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances
U.S. - New Jersey - Environmental Hazardous Substances List
U.S. - New Jersey - Excluded Volatile Organic Compounds

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RTK - U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - New Jersey - Special Health Hazards Substances List  
U.S. - New Jersey - TCPA - Extraordinarily Hazardous Substances (EHS)  
U.S. - Ohio - Accidental Release Prevention - Threshold Quantities  
U.S. - Oregon - Permissible Exposure Limits - TWAs  
RTK - U.S. - Pennsylvania - RTK (Right to Know) List  
U.S. - Texas - Effects Screening Levels - Long Term  
U.S. - Texas - Effects Screening Levels - Short Term  
U.S. - Washington - Permissible Exposure Limits - Simple Asphyxiants

### Ethane (74-84-0)

U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)  
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)  
U.S. - Delaware - Accidental Release Prevention Regulations - Sufficient Quantities  
U.S. - Delaware - Accidental Release Prevention Regulations - Threshold Quantities  
U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities  
U.S. - Delaware - Volatile Organic Compounds Exempt from Requirements  
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1  
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2  
U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity  
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1  
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2  
RTK - U.S. - Massachusetts - Right To Know List  
U.S. - Massachusetts - Volatile Organic Compounds Exempt From Requirements  
U.S. - Minnesota - Hazardous Substance List  
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances  
U.S. - New Jersey - Environmental Hazardous Substances List  
U.S. - New Jersey - Excluded Volatile Organic Compounds  
RTK - U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - New Jersey - Special Health Hazards Substances List  
U.S. - New Jersey - TCPA - Extraordinarily Hazardous Substances (EHS)  
U.S. - Ohio - Accidental Release Prevention - Threshold Quantities  
U.S. - Oregon - Permissible Exposure Limits - TWAs  
RTK - U.S. - Pennsylvania - RTK (Right to Know) List  
U.S. - Texas - Effects Screening Levels - Long Term  
U.S. - Texas - Effects Screening Levels - Short Term  
U.S. - Washington - Permissible Exposure Limits - Simple Asphyxiants

### Propane (74-98-6)

U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)  
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)  
U.S. - Delaware - Accidental Release Prevention Regulations - Sufficient Quantities  
U.S. - Delaware - Accidental Release Prevention Regulations - Threshold Quantities  
U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities  
U.S. - Idaho - Occupational Exposure Limits - TWAs  
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1  
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2  
U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity  
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1  
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2  
RTK - U.S. - Massachusetts - Right To Know List  
U.S. - Michigan - Occupational Exposure Limits - TWAs  
U.S. - Minnesota - Hazardous Substance List  
U.S. - Minnesota - Permissible Exposure Limits - TWAs  
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances  
U.S. - New Jersey - Environmental Hazardous Substances List  
RTK - U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - New Jersey - Special Health Hazards Substances List  
U.S. - New Jersey - TCPA - Extraordinarily Hazardous Substances (EHS)



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U.S. - New York - Occupational Exposure Limits - TWAs  
U.S. - Ohio - Accidental Release Prevention - Threshold Quantities  
U.S. - Oregon - Permissible Exposure Limits - TWAs  
RTK - U.S. - Pennsylvania - RTK (Right to Know) List  
U.S. - Tennessee - Occupational Exposure Limits - TWAs  
U.S. - Texas - Effects Screening Levels - Long Term  
U.S. - Texas - Effects Screening Levels - Short Term  
U.S. - Vermont - Permissible Exposure Limits - TWAs  
U.S. - Washington - Permissible Exposure Limits - STELs  
U.S. - Washington - Permissible Exposure Limits - TWAs

### **Carbon dioxide (124-38-9)**

U.S. - Idaho - Occupational Exposure Limits - TWAs  
U.S. - Maine - Air Pollutants - Greenhouse Gases (GHG)  
U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity  
RTK - U.S. - Massachusetts - Right To Know List  
U.S. - Massachusetts - Volatile Organic Compounds Exempt From Requirements  
U.S. - Michigan - Occupational Exposure Limits - STELs  
U.S. - Michigan - Occupational Exposure Limits - TWAs  
U.S. - Minnesota - Hazardous Substance List  
U.S. - Minnesota - Permissible Exposure Limits - STELs  
U.S. - Minnesota - Permissible Exposure Limits - TWAs  
RTK - U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - New York - Occupational Exposure Limits - TWAs  
U.S. - Oregon - Permissible Exposure Limits - TWAs  
RTK - U.S. - Pennsylvania - RTK (Right to Know) List  
U.S. - Tennessee - Occupational Exposure Limits - STELs  
U.S. - Tennessee - Occupational Exposure Limits - TWAs  
U.S. - Texas - Effects Screening Levels - Long Term  
U.S. - Texas - Effects Screening Levels - Short Term  
U.S. - Vermont - Permissible Exposure Limits - STELs  
U.S. - Vermont - Permissible Exposure Limits - TWAs  
U.S. - Washington - Permissible Exposure Limits - STELs  
U.S. - Washington - Permissible Exposure Limits - TWAs

### **Butane (106-97-8)**

U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)  
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)  
U.S. - Delaware - Accidental Release Prevention Regulations - Sufficient Quantities  
U.S. - Delaware - Accidental Release Prevention Regulations - Threshold Quantities  
U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities  
U.S. - Maine - Chemicals of High Concern  
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1  
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2  
U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity  
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1  
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2  
RTK - U.S. - Massachusetts - Right To Know List  
U.S. - Michigan - Occupational Exposure Limits - TWAs  
U.S. - Minnesota - Chemicals of High Concern  
U.S. - Minnesota - Hazardous Substance List  
U.S. - Minnesota - Permissible Exposure Limits - TWAs  
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances  
U.S. - New Jersey - Environmental Hazardous Substances List  
RTK - U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - New Jersey - Special Health Hazards Substances List  
U.S. - New Jersey - TCPA - Extraordinarily Hazardous Substances (EHS)  
U.S. - New York - Occupational Exposure Limits - TWAs  
U.S. - Ohio - Accidental Release Prevention - Threshold Quantities

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U.S. - Oregon - Permissible Exposure Limits - TWAs  
RTK - U.S. - Pennsylvania - RTK (Right to Know) List  
U.S. - Tennessee - Occupational Exposure Limits - TWAs  
U.S. - Texas - Effects Screening Levels - Long Term  
U.S. - Texas - Effects Screening Levels - Short Term  
U.S. - Vermont - Permissible Exposure Limits - TWAs  
U.S. - Washington - Permissible Exposure Limits - STELs  
U.S. - Washington - Permissible Exposure Limits - TWAs

### **Nitrogen (7727-37-9)**

U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity  
RTK - U.S. - Massachusetts - Right To Know List  
U.S. - Minnesota - Hazardous Substance List  
RTK - U.S. - New Jersey - Right to Know Hazardous Substance List  
RTK - U.S. - Pennsylvania - RTK (Right to Know) List  
U.S. - Washington - Permissible Exposure Limits - Simple Asphyxiants

### **Hydrogen sulfide (7783-06-4)**

U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Acute  
U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Chronic  
U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)  
U.S. - Colorado - Hazardous Wastes - Discarded Chemical Products, Off-Specification Species, Container and Spill Residues  
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)  
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)  
U.S. - Delaware - Accidental Release Prevention Regulations - Sufficient Quantities  
U.S. - Delaware - Accidental Release Prevention Regulations - Threshold Quantities  
U.S. - Delaware - Accidental Release Prevention Regulations - Toxic Endpoints  
U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities  
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations  
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)  
U.S. - Idaho - Occupational Exposure Limits - Acceptable Maximum Peak Above the Ceiling Concentration for an 8-Hour Shift  
U.S. - Idaho - Occupational Exposure Limits - Ceilings  
U.S. - Idaho - Occupational Exposure Limits - TWAs  
U.S. - Louisiana - Reportable Quantity List for Pollutants  
U.S. - Maine - Air Pollutants - Hazardous Air Pollutants  
U.S. - Massachusetts - Allowable Ambient Limits (AALs)  
U.S. - Massachusetts - Allowable Threshold Concentrations (ATCs)  
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1  
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2  
U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity  
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1  
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2  
RTK - U.S. - Massachusetts - Right To Know List  
U.S. - Massachusetts - Threshold Effects Exposure Limits (TELs)  
U.S. - Massachusetts - Toxics Use Reduction Act  
U.S. - Michigan - Occupational Exposure Limits - STELs  
U.S. - Michigan - Occupational Exposure Limits - TWAs  
U.S. - Michigan - Polluting Materials List  
U.S. - Michigan - Process Safety Management Highly Hazardous Chemicals  
U.S. - Minnesota - Chemicals of High Concern  
U.S. - Minnesota - Hazardous Substance List  
U.S. - Minnesota - Permissible Exposure Limits - STELs  
U.S. - Minnesota - Permissible Exposure Limits - TWAs  
U.S. - Montana - Ambient Air Quality Standards  
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour  
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual  
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances  
U.S. - New Jersey - Environmental Hazardous Substances List  
RTK - U.S. - New Jersey - Right to Know Hazardous Substance List

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U.S. - New Jersey - Special Health Hazards Substances List  
 U.S. - New Jersey - TCPA - Extraordinarily Hazardous Substances (EHS)  
 U.S. - New Mexico - Air Quality - Ambient Air Quality Standards  
 U.S. - New York - Occupational Exposure Limits - Ceilings  
 U.S. - New York - Occupational Exposure Limits - TWAs  
 U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances  
 U.S. - North Carolina - Control of Toxic Air Pollutants  
 U.S. - North Dakota - Ambient Air Quality Standards - Maximum Permissible Concentrations  
 U.S. - North Dakota - Hazardous Wastes - Discarded Chemical Products, Off-Specification Species, Container and Spill Residues  
 U.S. - Ohio - Accidental Release Prevention - Threshold Quantities  
 U.S. - Ohio - Extremely Hazardous Substances - Threshold Quantities  
 U.S. - Oregon - Permissible Exposure Limits - Ceilings  
 U.S. - Oregon - Permissible Exposure Limits - STELs  
 U.S. - California - Safer Consumer Products - Initial List of Candidate Chemicals and Chemical Groups  
 RTK - U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List  
 RTK - U.S. - Pennsylvania - RTK (Right to Know) List  
 U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 1-Hour  
 U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 24-Hour  
 U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - Annual  
 U.S. - South Carolina - Toxic Air Pollutants - Maximum Allowable Concentrations  
 U.S. - South Carolina - Toxic Air Pollutants - Pollutant Categories  
 U.S. - Tennessee - Occupational Exposure Limits - STELs  
 U.S. - Tennessee - Occupational Exposure Limits - TWAs  
 U.S. - Texas - Drinking Water Standards - Secondary Constituent Levels (SCLs)  
 U.S. - Texas - Effects Screening Levels - Long Term  
 U.S. - Texas - Effects Screening Levels - Short Term  
 U.S. - Vermont - Hazardous Waste - Hazardous Constituents  
 U.S. - Vermont - Permissible Exposure Limits - STELs  
 U.S. - Vermont - Permissible Exposure Limits - TWAs  
 U.S. - Virginia - Water Quality Standards - Chronic Freshwater Aquatic Life  
 U.S. - Virginia - Water Quality Standards - Chronic Saltwater Aquatic Life  
 U.S. - Washington - Dangerous Waste - Dangerous Waste Constituents List  
 U.S. - Washington - Dangerous Waste - Discarded Chemical Products List  
 U.S. - Washington - Permissible Exposure Limits - STELs  
 U.S. - Washington - Permissible Exposure Limits - TWAs  
 U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 25 Feet to Less Than 40 Feet  
 U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 40 Feet to Less Than 75 Feet  
 U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 75 Feet or Greater  
 U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights Less Than 25 Feet  
 U.S. - Wyoming - Process Safety Management - Highly Hazardous Chemicals  
 U.S. - Alaska - Water Quality Standards - Chronic Aquatic Life Criteria for Fresh Water  
 U.S. - Alaska - Water Quality Standards - Chronic Aquatic Life Criteria for Marine Water

### 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.

#### GHS Full Text Phrases:

Acute Tox. 2 (Inhalation:gas)	Acute toxicity (inhalation:gas) Category 2
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Compressed gas	Gases under pressure Compressed gas
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Gas 1	Flammable gases Category 1
Liquefied gas	Gases under pressure Liquefied gas
Simple Asphy	Simple Asphyxiant
STOT SE 3	Specific target organ toxicity (single exposure) Category 3

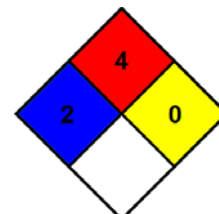
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H220	Extremely flammable gas
H280	Contains gas under pressure; may explode if heated
H319	Causes serious eye irritation
H330	Fatal if inhaled
H335	May cause respiratory irritation
H380	May displace oxygen and cause rapid suffocation
H400	Very toxic to aquatic life

- 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 Hazard : 0 - Normally stable, even under fire exposure conditions, and are not reactive 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)