

Safety Data Sheet



Section 1: Identification

Product identifier

Product Name • Methane (0.0010 - 0.0500%), Ethylene (0.0300 - 2%), Carbon Dioxide (Balance)

Product Code • MSDS No.: M-E300011/E-1

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

Recommended use • Calibration Gas

Details of the supplier of the safety data sheet

Manufacturer • Air Liquide
2700 Post Oak Blvd.
Houston, TX 77056
United States
www.us.airliquide.com
sds@airliquide.com

Telephone (Technical) • 713-896-2896

Telephone (Technical) • 800-819-1704

Emergency telephone number

Manufacturer • 800-424-9300

Manufacturer • +1 703-527-3887

Section 2: Hazard Identification

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

OSHA HCS 2012 • Compressed Gas - H280
Simple Asphyxiant

Label elements

OSHA HCS 2012

WARNING



Hazard statements • Contains gas under pressure; may explode if heated - H280
May displace oxygen and cause rapid suffocation.

Precautionary statements

Storage/Disposal • Store in a well-ventilated place. - P403

Other hazards**OSHA HCS 2012**

- Mixtures containing carbon dioxide can increase respiration and heart rate. Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada**According to WHMIS****Classification of the substance or mixture****WHMIS**

- Compressed Gas - A

Label elements**WHMIS**

- Compressed Gas - A

Other hazards**WHMIS**

- Mixtures containing carbon dioxide can increase respiration and heart rate. This material is a simple asphyxiant. May displace or reduce oxygen available for breathing especially in confined spaces. In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

Section 3 - Composition/Information on Ingredients**Substances**

- Material does not meet the criteria of a substance.

Mixtures

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Carbon dioxide	CAS:124-38-9	99.969% TO 99.75%	Inhalation-Rat LC50 • 470000 ppm 30 Minute(s)	OSHA HCS 2012: Press. Gas - Comp.; Simp. Asphyx.	Balance
Ethylene	CAS:74-85-1	0.03% TO 0.2%	NDA	OSHA HCS 2012: Press. Gas - Comp.; Flam Gas 1; Eye Irrit 2A; STOT SE 3: Narc.	300 - 2000 ppm
Methane	CAS:74-82-8	0.001% TO 0.05%	NDA	OSHA HCS 2012: Flam. Gas 1; Press. Gas - Comp; Simp. Asphyx.	10 - 500 ppm

See Section 16 for full text of H-statements and R-phrases.

Section 4: First-Aid Measures**Description of first aid measures****Inhalation**

- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. Give artificial respiration if victim

- is not breathing. If signs/symptoms continue, get medical attention.
- Skin**
- Although exposure is unlikely, in case of contact immediately flush skin with running water. If skin irritation develops get medical advice/attention.
- Eye**
- First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If irritation develops and persists, get medical attention.
- Ingestion**
- Ingestion is not considered a potential route of exposure.

Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. A potential health hazard associated with this gas is anoxia.

Other information

- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. **RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO GASES WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT.** At a minimum, Self-Contained Breathing Apparatus must be worn. Victim(s) who experience any adverse effect after over-exposure to this gas mixture must be taken for medical attention. Rescuers should be taken for medical attention if necessary. Take a copy of the label and the MSDS to physician or other health professional with victim(s).

Section 5: Fire-Fighting Measures

Extinguishing media

- Suitable Extinguishing Media**
- Use extinguishing agent suitable for type of surrounding fire.

- Unsuitable Extinguishing Media**
- No data available

Special hazards arising from the substance or mixture

- Unusual Fire and Explosion Hazards**
- Containers may explode when heated.
Ruptured cylinders may rocket.

- Hazardous Combustion Products**
- No data available

Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations **ONLY**; it is not effective in spill situations where direct contact with the substance is possible.
Wear positive pressure self-contained breathing apparatus (SCBA).
Move containers from fire area if you can do it without risk.
FIRE: If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.
FIRE INVOLVING TANKS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
FIRE INVOLVING TANKS: Cool containers with flooding quantities of water until well after fire is out.
FIRE INVOLVING TANKS: Do not direct water at source of leak or safety devices; icing may occur.
FIRE INVOLVING TANKS: Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
FIRE INVOLVING TANKS: ALWAYS stay away from tanks engulfed in fire.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions

- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Do not touch or walk through spilled material. Ventilate the area before entry.

Emergency Procedures

- Stop leak if you can do it without risk. Keep unauthorized personnel away. Keep out of low areas. Stay upwind. Do not direct water at spill or source of leak. **LARGE SPILL:** Consider initial downwind evacuation for at least 500 meters (1/3 mile)

Environmental precautions

- No special environmental precautions necessary.

Methods and material for containment and cleaning up

Containment/Clean-up Measures

- Stop leak if you can do it without risk. Do not direct water at spill or source of leak. Use water spray to reduce vapors; do not put water directly on leak, spill area or inside container. If possible, turn leaking containers so that gas escapes rather than liquid. Isolate area until gas has dispersed. Ventilate the area.

Section 7 - Handling and Storage

Precautions for safe handling

Handling

- Use only with adequate ventilation. Ventilate closed spaces before entering. Be aware of any signs of dizziness or fatigue, especially if work is done in a poorly ventilated area; exposures to fatal concentrations of this gas mixture could occur without any significant warning symptoms, due to olfactory fatigue or oxygen deficiency. Cylinders should be firmly secured to prevent falling or being knocked-over. Do not attempt to repair, adjust, or in any other way modify cylinders. If there is a malfunction or another type of operational problem, contact nearest distributor immediately. Empty containers retain product residue and can be hazardous. Do not cut, weld, puncture or incinerate container.

Conditions for safe storage, including any incompatibilities

Storage

- Store in a cool, dry, well-ventilated place. Protect cylinders against physical damage. Cylinders should be firmly secured to prevent falling or being knocked-over.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines						
	Result	ACGIH	Canada Ontario	Canada Quebec	China	Europe
Methane (74-82-8)	TWAs	1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)	1000 ppm TWA	Not established	Not established	Not established
Ethylene (74-85-1)	TWAs	200 ppm TWA	200 ppm TWA	Not established	Not established	Not established
Carbon dioxide (124-38-9)	TWAs	5000 ppm TWA	5000 ppm TWA	5000 ppm TWAEV; 9000 mg/m3 TWAEV	9000 mg/m3 TWA	5000 ppm TWA; 9000 mg/m3 TWA
	STELs	30000 ppm STEL	30000 ppm STEL	30000 ppm STEV; 54000 mg/m3 STEV	18000 mg/m3 STEL	Not established
Exposure Limits/Guidelines (Con't.)						
	Result	France	Germany DFG	Germany TRGS	Ireland	Israel
						1000 ppm TWA (gas,

Methane (74-82-8)	TWAs	Not established	Not established	Not established	1000 ppm TWA	listed under Aliphatic hydrocarbon gases: Alkane C1-4)
Ethylene (74-85-1)	TWAs	Not established	Not established	Not established	200 ppm TWA	200 ppm TWA
Carbon dioxide (124-38-9)	TWAs	5000 ppm TWA [VME] (indicative limit); 9000 mg/m3 TWA [VME] (indicative limit)	Not established	5000 ppm TWA AGW (exposure factor 2); 9100 mg/m3 TWA AGW (exposure factor 2)	5000 ppm TWA; 9000 mg/m3 TWA	5000 ppm TWA
	STELs	Not established	Not established	Not established	Not established	30000 ppm STEL
	Ceilings	Not established	10000 ppm Peak; 18200 mg/m3 Peak	Not established	Not established	Not established
	MAKs	Not established	5000 ppm TWA MAK; 9100 mg/m3 TWA MAK	Not established	Not established	Not established

Exposure Limits/Guidelines (Con't.)

	Result	Italy	NIOSH	OSHA	Portugal	Spain
Methane (74-82-8)	TWAs	Not established	Not established	Not established	1000 ppm TWA [VLE-MP]	1000 ppm TWA [VLA-ED]
Ethylene (74-85-1)	TWAs	Not established	Not established	Not established	200 ppm TWA [VLE-MP]	200 ppm TWA [VLA-ED]
Carbon dioxide (124-38-9)	STELs	Not established	30000 ppm STEL; 54000 mg/m3 STEL	Not established	30000 ppm STEL [VLE-CD]	Not established
	TWAs	5000 ppm TWA; 9000 mg/m3 TWA	5000 ppm TWA; 9000 mg/m3 TWA	5000 ppm TWA; 9000 mg/m3 TWA	5000 ppm TWA [VLE-MP]	5000 ppm TWA [VLA-ED] (indicative limit value); 9150 mg/m3 TWA [VLA-ED] (indicative limit value)

Exposure Limits/Guidelines (Con't.)

	Result	Sweden
Ethylene (74-85-1)	STELs	1000 ppm STV; 1200 mg/m3 STV
	TWAs	250 ppm LLV; 330 mg/m3 LLV
Carbon dioxide (124-38-9)	STELs	10000 ppm STV; 18000 mg/m3 STV
	TWAs	5000 ppm LLV; 9000 mg/m3 LLV

Exposure Control Notations

Portugal

- Ethylene (74-85-1): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)

Ireland

- Methane (74-82-8): **Simple Asphyxiants:** (Asphyxiant)
- Ethylene (74-85-1): **Simple Asphyxiants:** (Asphyxiant)

Germany TRGS

- Ethylene (74-85-1): **Carcinogens:** (Based on current data, this substance cannot be classified in categories 1-3) | **Developmental Toxins:** (Based on current data, this substance cannot be classified in categories 1-3) | **Reproductive Toxins:** (Based on current data, this substance cannot be classified in categories 1-3) | **Germ Cell Mutagens:** (Category 3)

Germany DFG

- Ethylene (74-85-1): **Carcinogens:** (Category 3B (could be carcinogenic for man))

Exposure controls

Engineering Measures/Controls

- Good general ventilation 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.

Personal Protective Equipment

Respiratory

- Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face

- Wear safety glasses.

Skin/Body

- Wear leather gloves when handling cylinders.

Environmental Exposure Controls

- Follow best practice for site management and disposal of waste. Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

STEV = Short Term Exposure Value

NIOSH = National Institute of Occupational Safety and Health

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

OSHA = Occupational Safety and Health Administration

TWAEV = Time-Weighted Average Exposure Value

STEL = Short Term Exposure Limits are based on 15-minute exposures

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Gas	Appearance/Description	Colorless compressed gas with no odor.
Color	Colorless	Odor	Odorless
Particulate Size	Data lacking	Odor Threshold	Not relevant
General Properties			
Boiling Point	Not relevant	Melting Point	Data lacking
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	1.56 Water=1	Water Solubility	87.8 % @ 68 F(20 C)
Volatility			
Vapor Pressure	Data lacking	Vapor Density	1.53 Air=1
Evaporation Rate	Data lacking		
Flammability			
Flash Point	Not relevant	UEL	Not relevant
LEL	Not relevant	Autoignition	Not relevant
Flammability (solid, gas)	Flammable gas.		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

Section 10: Stability and Reactivity

Reactivity

- No dangerous reaction known under conditions of normal use.

Chemical stability

- Stable under normal temperatures and pressures.

Possibility of hazardous reactions

- Hazardous polymerization will not occur.

Conditions to avoid

- Excess heat.

Incompatible materials

- Carbon dioxide reacts with alkaline materials.

Hazardous decomposition products

- Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11 - Toxicological Information

Information on toxicological effects

Components		
Carbon dioxide (99.969% TO 99.75%)	124- 38-9	Acute Toxicity: Inhalation-Rat LC50 • 470000 ppm 30 Minute(s); Reproductive: Inhalation-Rat TCLo • 6 pph 24 Hour(s)(10D preg); <i>Reproductive Effects:Specific Developmental Abnormalities:Musculoskeletal system; Reproductive Effects:Specific Developmental Abnormalities:Cardiovascular (circulatory) system; Reproductive Effects:Specific Developmental Abnormalities:Respiratory system</i>

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012 • Classification criteria not met
Aspiration Hazard	OSHA HCS 2012 • Classification criteria not met
Carcinogenicity	OSHA HCS 2012 • Classification criteria not met
Germ Cell Mutagenicity	OSHA HCS 2012 • Classification criteria not met
Skin corrosion/Irritation	OSHA HCS 2012 • Classification criteria not met
Skin sensitization	OSHA HCS 2012 • Classification criteria not met
STOT-RE	OSHA HCS 2012 • Classification criteria not met
STOT-SE	OSHA HCS 2012 • Classification criteria not met
Toxicity for Reproduction	OSHA HCS 2012 • Classification criteria not met
Respiratory sensitization	OSHA HCS 2012 • Classification criteria not met
Serious eye damage/Irritation	OSHA HCS 2012 • Classification criteria not met

Potential Health Effects

Inhalation

Acute (Immediate)

- Inhalation of carbon dioxide can increase respiration and heart rate. If this material is released in a small, poorly ventilated area (i.e. an enclosed or confined space), an oxygen-deficient environment may occur. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. Under some circumstances of over-exposure, death may occur. The following effects associated with decreased levels of oxygen: increase in breathing and pulse rate, emotional upset, abnormal fatigue, nausea, vomiting, collapse, loss of consciousness, convulsive movements, respiratory collapse and death.

- Chronic (Delayed)**
 - No data available
- Skin**
 - Acute (Immediate)**
 - Under normal conditions of use, no health effects are expected.
 - Chronic (Delayed)**
 - Under normal conditions of use, no health effects are expected.
- Eye**
 - Acute (Immediate)**
 - Under normal conditions of use, no health effects are expected.
 - Chronic (Delayed)**
 - Under normal conditions of use, no health effects are expected.
- Ingestion**
 - Acute (Immediate)**
 - Ingestion is not anticipated to be a likely route of exposure to this product.
 - Chronic (Delayed)**
 - Ingestion is not anticipated to be a likely route of exposure to this product.
- Carcinogenic Effects**
 - The components of this material are not found on the following lists: FEDERAL OSHA Z LIST, NTP and IARC; therefore, they are not considered to be, nor suspected to be, cancer-causing agents by these agencies.

Section 12 - Ecological Information

Toxicity

- Material data lacking.

Persistence and degradability

- Material data lacking.

Bioaccumulative potential

- Material data lacking.

Mobility in Soil

- Material data lacking.

Other adverse effects

- Material data lacking.

Section 13 - Disposal Considerations

Waste treatment methods

- Product waste**
 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.
- Packaging waste**
 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	UN number	UN proper shipping name	Transport hazard class(es)	Packing group	Environmental hazards
DOT	UN1956	Compressed gas, n.o.s. (Carbon Dioxide)	2.2	NDA	NDA
TDG	UN1956	COMPRESSED GAS, N.O.S. (Carbon Dioxide)	2.2	NDA	NDA

IMO/IMDG	UN1956	COMPRESSED GAS, N.O.S. (Carbon Dioxide)	2.2	NDA	NDA
IATA/ICAO	UN1956	Compressed gas, n.o.s. (Carbon Dioxide)	2.2	NDA	NDA

Special precautions for user

- Cylinders should be transported in a secure position, in a well-ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles can present serious safety hazards. If transporting these cylinders in vehicles, ensure these cylinders are not exposed to extremely high temperatures (as may occur in an enclosed vehicle on a hot day). Additionally, the vehicle should be well-ventilated during transportation.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not relevant.

Section 15 - Regulatory Information

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

SARA Hazard Classifications • Pressure(Sudden Release of), Acute

State Right To Know				
Component	CAS	MA	NJ	PA
Carbon dioxide	124-38-9	Yes	Yes	Yes
Ethylene	74-85-1	Yes	Yes	Yes
Methane	74-82-8	Yes	Yes	Yes

Inventory						
Component	CAS	Canada DSL	Canada NDSL	China	EU EINECS	EU ELNICS
Carbon dioxide	124-38-9	Yes	No	Yes	Yes	No
Ethylene	74-85-1	Yes	No	Yes	Yes	No
Methane	74-82-8	Yes	No	Yes	Yes	No

Inventory (Con't.)		
Component	CAS	TSCA
Carbon dioxide	124-38-9	Yes
Ethylene	74-85-1	Yes
Methane	74-82-8	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Ethylene	74-85-1	A, B1, D2B
• Carbon dioxide	124-38-9	A; Uncontrolled product according to WHMIS classification criteria (solid)
• Methane	74-82-8	A, B1

Canada - WHMIS - Ingredient Disclosure List

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	1 %
• Methane	74-82-8	Not Listed

Environment**Canada - CEPA - Greenhouse Gases Subject to Mandatory Reporting**

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	1 GWP
• Methane	74-82-8	21 GWP

Canada - CEPA - Priority Substances List

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

Canada - DWQ (Drinking Water Quality) - IMACs

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

Other**Canada - Accelerated Reduction/Elimination of Toxics (ARET)**

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

Canada New Brunswick**Environment****Canada - New Brunswick - Ozone Depleting Substances - Schedule A**

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

Canada - New Brunswick - Ozone Depleting Substances - Schedule B

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

China**Environment****China - Ozone Depleting Substances - First Schedule**

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

China - Ozone Depleting Substances - Second Schedule

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

China - Ozone Depleting Substances - Third Schedule

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

Other**China - Annex I & II - Controlled Chemicals Lists**

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed
China - Dangerous Goods List		
• Ethylene	74-85-1	(including refrigerated liquid)
• Carbon dioxide	124-38-9	(including solid or refrigerated liquid)
• Methane	74-82-8	(compressed or refrigerated liquid)
China - Export Control List - Part I Chemicals		
• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

Europe

Other

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Classification

• Ethylene	74-85-1	F+; R12 R67
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	F+; R12

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Concentration Limits

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Labelling

• Ethylene	74-85-1	F+ R:12-67 S:(2)-9-16-33-45
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	F+ R:12 S:(2)-9-16-33

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Notes - Substances and Preparations

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Safety Phrases

• Ethylene	74-85-1	S:(2)-9-16-33-45
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	S:(2)-9-16-33

Germany

Environment

Germany - TA Luft - Types and Classes

• Ethylene	74-85-1	organic Substance: 5.2.5, Class I
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

Germany - Water Classification (VwVwS) - Annex 1

• Ethylene	74-85-1	ID Number 742, not considered hazardous to water
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• Carbon dioxide	124-38-9	ID Number 256, not considered hazardous to water
• Methane	74-82-8	ID Number 1343, not considered hazardous to water
Germany - Water Classification (VwVwS) - Annex 2 - Water Hazard Classes		
• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed
Germany - Water Classification (VwVwS) - Annex 3		
• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

Other**Germany - Specifically Regulated Chemicals in TRGS**

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

Portugal**Other****Portugal - Prohibited Substances**

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

United Kingdom**Environment****United Kingdom - Pollution Inventory - Schedule 1 - Thresholds for Releases to Air**

• Ethylene	74-85-1	1000 kg 10000000 kg (qualifying renewable fuel sources are reportable when the total amount of CO2 released is above 10 million kg); 10000000 kg
• Carbon dioxide	124-38-9	
• Methane	74-82-8	10000 kg

United Kingdom - Substances Contained in Dangerous Substances or Preparations

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

Other**United Kingdom - Workplace Exposure Limits (WELs) - Substances in Review**

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

United Kingdom - List of Dangerous Substances in Water

• Ethylene	74-85-1	Not Listed
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• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Ethylene	74-85-1	1.0 % de minimis concentration
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

United States - Pennsylvania

Labor

U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

• Ethylene	74-85-1	
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances

• Ethylene	74-85-1	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Methane	74-82-8	Not Listed

Section 16 - Other Information

Last Revision Date

- 05/September/2014

Preparation Date

- 05/September/2014

Disclaimer/Statement of Liability

- To the best of Air Liquide's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this gas mixture is combined with other materials, all component properties must be considered. Data

may be changed from time to time. Be sure to consult the latest edition.

Key to abbreviations

NDA = No Data Available
