Safety Data Sheet

Section 1: Identification

Product identifier

Product Name
- **Flammable Gas Mixture Containing Butane (1-10%), Ethane (1-10%), Ethylene (1-10%), Propane (1-49%), and Propylene (Balance)**

Product Code
- MSDS No.: 40088

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

Recommended use
- For general analytical/synthetic chemical uses.

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 - CHEMTREC

Manufacturer
- +1 703-527-3887 - Outside United States

Section 2: Hazard Identification

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

OSHA HCS 2012
- Flammable Gases 1 - H220
  Liquefied Gas - H280
  Simple Asphyxiant
  Hazards Not Otherwise Classified - Health Hazard - Frostbite

Label elements

OSHA HCS 2012

DANGER

Hazard statements
- Extremely flammable gas - H220

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

Precautionary statements

Prevention
- Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking. - P210
  Wear protective gloves/protective clothing/eye protection/face protection. - P280

Response
- Leaking gas fire: Do not extinguish, unless leak can be stopped safely. - P377
  Eliminate all ignition sources if safe to do so. - P381

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

Other hazards

OSHA HCS 2012
- Contact with gas or liquefied gas will cause burns, severe injury and/or frostbite. 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
  Flammable Gases - B1

Label elements

WHMIS

- Compressed Gas - A
  Flammable Gases - B1

Other hazards

WHMIS
- This material is a simple asphyxiant. May displace or reduce oxygen available for breathing especially in confined spaces.
  Contact with gas or liquefied gas will cause burns, severe injury and/or frostbite.
  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**
Butane	**CAS:**106-97-8	1% TO 10%	Inhalation-Rat LC50 • 658 g/m³ 4 Hour(s)	**OSHA HCS 2012:** Flam. Gas 1; Press. Gas - Comp.	NDA
Ethane	**CAS:**74-84-0	1% TO 10%	NDA	**OSHA HCS 2012:** Press. Gas - Comp., Simp. Asphyx.; Flam. Gas 1	NDA

Ethylene	**CAS:**74-85-1	1% TO 10%	NDA	**OSHA HCS 2012:** Flam. Gas 1, ; Press. Gas, STOT SE 3: Narc.; Eye Irrit. 2A	NDA
Propane	**CAS:**74-98-6	1% TO 49%	NDA	**OSHA HCS 2012:** Flam. Gas 1; Press. Gas - Comp.; Simp. Asphyx	NDA
Propene	**CAS:**115-07-1	21% TO 96%	NDA	**OSHA HCS 2012:** Flam. Gas 1; Press. Gas - Comp.	Balance

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
- If frostbite has occurred, seek medical attention immediately; do NOT rub the affected area(s) or flush them with water. In order to prevent further tissue damage, do NOT attempt to remove frozen clothing from frostbitten areas. If frostbite has not occurred, immediately and thoroughly wash contaminated skin with soap and water.

Eye
- If eye tissue is frozen, seek medical attention immediately; if tissue is not frozen, immediately and thoroughly flush the eyes with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation, pain, swelling, lacrimation or photophobia persist, get medical attention as soon as possible.

Ingestion
- If frostbite has occurred, seek medical attention immediately; do NOT rub the affected area(s) or flush them with water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting.

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.

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
- SMALL FIRES: Dry chemical or CO2.
  LARGE FIRES: Water spray or fog.

Unsuitable Extinguishing Media
- No data available

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards
- EXTREMELY FLAMMABLE
  Will form explosive mixtures with air.
  Vapors may travel to source of ignition and flash back.
  Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.

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.
Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.
Wear positive pressure self-contained breathing apparatus (SCBA).
DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED
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 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.
FIRE INVOLVING TANKS: ALWAYS stay away from tanks engulfed in fire.
FIRE INVOLVING TANKS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
FIRE INVOLVING TANKS: Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
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: For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

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

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions. Stop leak if you can do it without risk. Keep unauthorized personnel away. Keep out of low areas. Stay upwind. LARGE SPILL: Consider initial downwind evacuation for at least 800 meters (1/2 mile)

Environmental precautions

- Prevent spreading of vapors through sewers, ventilation systems and confined areas.

Methods and material for containment and cleaning up

Containment/Clean-up Measures

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

Section 7 - Handling and Storage

Precautions for safe handling

Handling

- Keep away from heat and ignition sources – No Smoking. Take precautionary measures against static charges. All equipment used when handling the product must be grounded. Use only non-sparking tools. 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. Use explosion-proof - electrical, ventilating and/or lighting equipment. 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

- Cylinders should be stored in dry, well-ventilated areas away from sources of heat, ignition and direct sunlight. Do not allow area where cylinders are stored to exceed 52C (125F). Cylinders must be protected from the environment, and preferably kept at room temperature approximately 21C (70F). Protect cylinders against physical damage. Cylinders should be firmly secured to prevent falling or being knocked-over. Store locked up.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines						
	Result	**ACGIH**	**Canada Ontario**	**Canada Quebec**	**NIOSH**	**OSHA**
Ethylene (74-85-1)	TWAs	200 ppm TWA	200 ppm TWA	Not established	Not established	Not established
Ethane (74-84-0)	TWAs	1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)	1000 ppm TWA	Not established	Not established	Not established
Propane (74-98-6)	TWAs	1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)	1000 ppm TWA	1000 ppm TWAEV; 1800 mg/m3 TWAEV	1000 ppm TWA; 1800 mg/m3 TWA	1000 ppm TWA; 1800 mg/m3 TWA
Butane (106-97-8)	TWAs	Not established	800 ppm TWA (listed under Aliphatic hydrocarbon gases)	800 ppm TWAEV; 1900 mg/m3 TWAEV	800 ppm TWA; 1900 mg/m3 TWA	Not established
	STELs	1000 ppm STEL	Not established	Not established	Not established	Not established
Propene (115-07-1)	TWAs	500 ppm TWA	500 ppm TWA	Not established	Not established	Not established

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. Use explosion-proof - electrical, ventilating and/or lighting equipment.

Personal Protective Equipment

Respiratory

- In case of insufficient ventilation, wear suitable respiratory equipment. Follow the OSHA respirator regulations found in 29 CFR 1910.134. Use a NIOSH/MSHA 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
NIOSH = National Institute of Occupational Safety and Health
STEL = Short Term Exposure Limits are based on 15-minute exposures
TWAEV = Time-Weighted Average Exposure Value

OSHA = Occupational Safety and Health Administration

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

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Gas	Appearance/Description	Colorless, liquefied gas mixture with a mild to natural gas odor.
Color	Colorless	Odor	Mild to natural gas odor.
Odor Threshold	30 mg/m³		
General Properties			
Boiling Point	-47.72 C(-53.896 F) Propylene	Melting Point	-185 C(-301 F) Propylene
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	Data lacking	Water Solubility	0.009 % @ 37.8 C(100.04 F)
Viscosity	Data lacking		
Volatility			
Vapor Pressure	132.81 psig @ 21.1 C(69.98 F)	Vapor Density	1.4529 Air=1 Propylene
Evaporation Rate	Data lacking		
Flammability			
Flash Point	-135 C(-211 F) Ethane	UEL	11 % Propylene
LEL	1.8 % Butane	Autoignition	287 C(548.6 F) Butane
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

- Keep away from heat, sparks and flame.

Incompatible materials

- No data available

Hazardous decomposition products

- No data available

Section 11 - Toxicological Information

Information on toxicological effects

Components		
Butane (1% TO 10%)	106-97-8	**Acute Toxicity:** Inhalation-Rat LC50 • 658 g/m³ 4 Hour(s)
Propene (21% TO 96%)	115-07-1	**Mutagen:** Inhalation-Rat • 200 ppm 4 Week(s) 6 Hour(s); **Tumorigen / Carcinogen:** Inhalation-Rat TCLo • 128750 mg/kg 103 Week(s)-Continuous; *Tumorigenic*:**Neoplastic by RTECS criteria**; *Sense Organs and Special Senses:Olfaction*:**Tumors**

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

Route(s) of entry/exposure
- Inhalation, Skin, Eye, Ingestion

Potential Health Effects

Inhalation

Acute (Immediate)
- This material is a simple asphyxiant. May displace or reduce oxygen available for breathing especially in confined spaces. 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)
- Contact with rapidly expanding gas may cause burns or frostbite.

Chronic (Delayed)
- No data available

Eye

Acute (Immediate)
- Contact with rapidly expanding gas may cause burns or frostbite.

Chronic (Delayed)
- No data available

Ingestion

Acute (Immediate)
- Ingestion is not anticipated to be a likely route of exposure to this product.

Chronic (Delayed)
- No data available

Key to abbreviations
LC = Lethal Concentration
TC = Toxic Concentration

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.

Results of PBT and vPvB assessment

- PBT and vPvB assessment has not been conducted for this material.

Other adverse effects

- No studies have been found.

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	UN3161	Liquefied gas, flammable, n.o.s. (Propane, Propylene)	2.1	NDA	NDA
TDG	UN3161	LIQUEFIED GAS, FLAMMABLE, N.O.S. (Propane, Propylene)	2.1	NDA	NDA
IMO/IMDG	UN3161	LIQUEFIED GAS, FLAMMABLE, N.O.S. (Propane, Propylene)	2.1	NDA	NDA
IATA/ICAO	UN3161	Liquefied gas, flammable, n.o.s. (Propane, Propylene)	2.1	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

- Acute, Fire, Pressure(Sudden Release of)

State Right To Know				
Component	**CAS**	**MA**	**NJ**	**PA**
Butane	106-97-8	Yes	Yes	Yes
Ethane	74-84-0	Yes	Yes	Yes
Ethylene	74-85-1	Yes	Yes	Yes
Propane	74-98-6	Yes	Yes	Yes
Propene	115-07-1	Yes	Yes	Yes

Inventory				
Component	**CAS**	**Canada DSL**	**Canada NDSL**	**TSCA**
Butane	106-97-8	Yes	No	Yes
Ethane	74-84-0	Yes	No	Yes
Ethylene	74-85-1	Yes	No	Yes
Propane	74-98-6	Yes	No	Yes
Propene	115-07-1	Yes	No	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Ethylene	74-85-1	A, B1, D2B
• Ethane	74-84-0	A, B1
• Propane	74-98-6	A, B1
• Butane	106-97-8	A, B1
• Propene	115-07-1	A, B1

Canada - WHMIS - Ingredient Disclosure List

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	1 %
• Propene	115-07-1	Not Listed

Environment

Canada - 2004 NPRI (National Pollutant Release Inventory)

• Ethylene	74-85-1	Part 1, Group 1 Substance; Part 5 Substance
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Part 5 Substance
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Part 1, Group 1 Substance; Part 5 Substance

Canada - 2005 NPRI (National Pollutant Release Inventory)

• Ethylene	74-85-1	Part 1, Group 1 Substance; Part 5 Substance
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Part 5 Substance
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Part 1, Group 1 Substance; Part 5 Substance

Canada - CEPA - Greenhouse Gases Subject to Mandatory Reporting

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

Canada - CEPA - Priority Substances List

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

Canada - DWQ (Drinking Water Quality) - IMACs

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

Other

Canada - Accelerated Reduction/Elimination of Toxics (ARET)

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

Canada New Brunswick

Environment

Canada - New Brunswick - Ozone Depleting Substances - Schedule A

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

Canada - New Brunswick - Ozone Depleting Substances - Schedule B

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

United States

Labor

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

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

Environment

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

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

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

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

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

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

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

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

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

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

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

• Ethylene	74-85-1	1.0 % de minimis concentration
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	1.0 % de minimis concentration

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

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

United States - California

Environment

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

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

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

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

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

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

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

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

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

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

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

• Ethylene	74-85-1	Not Listed

• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

United States - Pennsylvania

Labor

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

• Ethylene	74-85-1	
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	

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

• Ethylene	74-85-1	Not Listed
• Ethane	74-84-0	Not Listed
• Propane	74-98-6	Not Listed
• Butane	106-97-8	Not Listed
• Propene	115-07-1	Not Listed

Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

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