Safety Data Sheet

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name
- **Carbon Dioxide (≤ 1 %), Methyl Mercaptan (≤ 0.04 %), Ethyl Mercaptan (≤ 0.02 %), n-Propyl Mercaptan (≤ 0.009 %), n-Butyl Mercaptan (≤ 0.003 %), Helium (Balance)**

Synonyms
- Sulfur Experts 3a

Product Code
- 90102

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

Relevant identified use(s)
- Calibration standard

1.3 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

1.4 Emergency telephone number

Manufacturer
- 800-424-9300

Manufacturer
- +1 703-527-3887

Section 2: Hazards Identification

EU/EEC

According to EU Directive 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]
According to EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

2.1 Classification of the substance or mixture

CLP
- Compressed Gas - H280

DSD/DPD
- Not classified

2.2 Label Elements

CLP

WARNING

Hazard statements • H280 - Contains gas under pressure; may explode if heated

Precautionary statements

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

DSD/DPD

Risk phrases • No label element(s) required

2.3 Other Hazards

CLP • This material is a simple asphyxiant. May displace or reduce oxygen available for breathing especially in confined spaces.
According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

DSD/DPD • This material is a simple asphyxiant. May displace or reduce oxygen available for breathing especially in confined spaces.
According to European Directive 1999/45/EC this preparation is not considered dangerous.

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012 • Compressed Gas - H280
Simple Asphyxiant

2.2 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

2.3 Other hazards

OSHA HCS 2012 • Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada

According to WHMIS

2.1 Classification of the substance or mixture

WHMIS • Compressed Gas - A

2.2 Label elements

WHMIS

• Compressed Gas - A

2.3 Other hazards

WHMIS • 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).

2.4 Other information

NFPA

Section 3 - Composition/Information on Ingredients

3.1 Substances

- Material does not meet the criteria of a substance in accordance with Regulation (EC) No 1272/2008.

3.2 Mixtures

Composition				
Chemical Name	**Identifiers**	**%**	**LD50/LC50**	**Classifications According to Regulation/Directive**
Carbon dioxide	**CAS:**124-38-9 **EC Number:**204-696-9	<= 1%	Inhalation-Rat LC50 • 470000 ppm 30 Minute (s)	**EU DSD/DPD:** Not Classified - Criteria not met **EU CLP:** Self Classified - Press. Gas - Comp., H280 **OSHA HCS 2012:** Press. Gas - Comp.; Simp. Asphyx.
Methyl Mercaptan	**CAS:**74-93-1 **EC Number:**200-822-1	<= 0.04%	Inhalation-Rat LC50 • 675 ppm	**EU DSD/DPD:** Annex I: F+; R12 T; R23 N; R50-53 **EU CLP:** Annex VI- Flam. Gas. 1, H220; Press. Gas, Acute Tox. 3 *, H331; Aquatic Acute 1, H400; Aquatic Chronic 1, H410 **OSHA HCS 2012:** Flam. Gas. 1; Press. Gas - Comp.; Eye Irrit. 2A; Skin Irrit. 2; STOT SE 3 Resp. Irrit. & Narc.; Acute Tox 3 (inh)
Ethyl Mercaptan	**CAS:**75-08-1 **EC Number:**200-837-3	<= 0.02%	Ingestion/Oral-Rat LD50 • 682 mg/kg Inhalation-Rat LC50 • 4420 ppm 4 Hour(s)	**EU DSD/DPD:** Annex I: F; R11 Xn; R20 N; R50-53 **EU CLP:** Annex VI- Flam. Liq. 2, H225; Acute Tox. 4 *, H332; Aquatic Acute 1, H400; Aquatic Chronic 1, H410 **OSHA HCS 2012:** Flam. Liq. 2; Eye Irrit. 2A; Skin Irrit. 2, STOT SE 3: Resp & Narc.; Acute Tox 4 (Oral); Acute Tox 4 (inhl)
n-Propyl Mercaptan	**CAS:**107-03-9 **EINECS:**203-455-5	<= 0.009%	Ingestion/Oral-Rat LD50 • 1790 mg/kg Inhalation-Rat LC50 • 7300 ppm 4 Hour(s)	**EU DSD/DPD:** Self Classified - F, R11; Xn, R22; Xi, R36/37/38 **EU CLP:** Self Classified - Flam. Liq. 2, H220; Eye Irrit. 2A, H319; Skin Irrit. 2, H315; STOT SE 3- Resp. Irrit., H335; Acute Tox 4 (oral), H302 **OSHA HCS 2012:** Flam. Liq. 2; Eye Irrit. 2A; Skin Irrit. 2; STOT SE 3- Resp. Irrit.; Acute Tox 4 (oral)
n-Butyl Mercaptan	**CAS:**109-79-5 **EINECS:**203-705-3	<= 0.003%	Ingestion/Oral-Rat LD50 • 1500 mg/kg Inhalation-Rat LC50 • 4020 ppm 4 Hour(s)	**EU DSD/DPD:** Self Classified- F, R11; Xn R20/22; R67; Xi, R36/37/38; Repr. 3, R63 **EU CLP:** Self Classified - Flam. Liq. 2, H225; Acute Tox. 4, H302; Acute Tox. 4, H332; STOT SE 3: Narc., H336; STOT SE 3: Resp. Irrit., H335; Repr. 2, H361d; Eye Irrit. 2, H319; Skin Irrit. 2, H315 **OSHA HCS 2012:** Flam. Liq. 2; Acute Tox. 4 (orl); STOT SE 3: Narc.; STOT SE 3: Resp. Irrit.; Repr. 2; Eye Irrit. 2A; Acute Tox. 4
Helium	**CAS:**7440-59-7 **EINECS:**231-168-5	Balance	NDA	**EU DSD/DPD:** Not Classified - Criteria not met **EU CLP:** Self Classified - Press. Gas - Comp., H280 **OSHA HCS 2012:** Press. Gas - Comp; Simp. Asphyx.

See Section 11 for Toxicological Information. See Section 16 for full text of H-statements and R-phrases.

Section 4 - First Aid Measures

4.1 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
- Wash skin with soap and water. If irritation develops and persists, get medical attention.

Eye
- Flush eyes with water for at least 15 minutes. If irritation develops and persists, get medical attention.

Ingestion
- Ingestion is not considered a potential route of exposure.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

4.3 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.

4.4 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 - Firefighting Measures

5.1 Extinguishing media

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

Unsuitable Extinguishing Media
- No data available

5.2 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

5.3 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

6.1 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)

6.2 Environmental precautions

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

6.3 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.

6.4 Reference to other sections

- Refer to Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 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.

7.2 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.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits/Guidelines						
	Result	**ACGIH**	**Canada Ontario**	**Canada Quebec**	**China**	**Europe**
n-Butyl Mercaptan (109-79-5)	STELs	Not established	Not established	Not established	5 mg/m3 STEL 5 mg/m3 STEL	Not established
	TWAs	0.5 ppm TWA 0.5 ppm TWA	0.5 ppm TWA 0.5 ppm TWA	0.5 ppm TWAEV; 1.8 mg/m3 TWAEV 0.5 ppm TWAEV; 1.8 mg/m3 TWAEV	2 mg/m3 TWA 2 mg/m3 TWA	Not established
Ethyl Mercaptan (75-08-1)	STELs	Not established	Not established	Not established	2.5 mg/m3 STEL	Not established
	TWAs	0.5 ppm TWA	0.5 ppm TWA	0.5 ppm TWAEV; 1.3 mg/m3 TWAEV	1 mg/m3 TWA	Not established
Methyl Mercaptan (74-93-1)	STELs	Not established	Not established	Not established	2.5 mg/m3 STEL	Not established
	TWAs	0.5 ppm TWA	0.5 ppm TWA	0.5 ppm TWAEV; 0.98 mg/m3 TWAEV	1 mg/m3 TWA	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**
n-Butyl Mercaptan (109-79-5)	TWAs	Not established	Not established	0.5 ppm TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, exposure factor 2); 1.9 mg/m3 TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, exposure factor 2) 0.5 ppm TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, exposure factor 2); 1.9 mg/m3 TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, exposure factor 2)	0.5 ppm TWA; 1.8 mg/m3 TWA 0.5 ppm TWA; 1.8 mg/m3 TWA	0.5 ppm TWA 0.5 ppm TWA
	Ceilings	Not established	1 ppm Peak; 3.8 mg/m3 Peak	Not established	Not established	Not established

			1 ppm Peak; 3.8 mg/m3 Peak			
	MAKs	Not established	0.5 ppm TWA MAK; 1.9 mg/m3 TWA MAK 0.5 ppm TWA MAK; 1.9 mg/m3 TWA MAK	Not established	Not established	Not established
Ethyl Mercaptan (75-08-1)	TWAs	0.5 ppm TWA [VME]; 1 mg/m3 TWA [VME]	Not established	0.5 ppm TWA AGW (exposure factor 2); 1.3 mg/m3 TWA AGW (exposure factor 2)	0.5 ppm TWA; 1 mg/m3 TWA	0.5 ppm TWA
	STELs	Not established	Not established	Not established	2 ppm STEL; 3 mg/m3 STEL	Not established
	Ceilings	Not established	1 ppm Peak; 2.6 mg/m3 Peak	Not established	Not established	Not established
	MAKs	Not established	0.5 ppm TWA MAK; 1.3 mg/m3 TWA MAK	Not established	Not established	Not established
Methyl Mercaptan (74-93-1)	TWAs	0.5 ppm TWA [VME]; 1 mg/m3 TWA [VME]	Not established	0.5 ppm TWA AGW (exposure factor 2); 1 mg/m3 TWA AGW (exposure factor 2)	0.5 ppm TWA; 1 mg/m3 TWA	0.5 ppm TWA
	Ceilings	Not established	1 ppm Peak; 2.0 mg/m3 Peak	Not established	Not established	Not established
	MAKs	Not established	0.5 ppm TWA MAK; 1.0 mg/m3 TWA MAK	Not established	Not established	Not established
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
n-Butyl Mercaptan (109-79-5)	TWAs	Not established	Not established	10 ppm TWA; 35 mg/m3 TWA 10 ppm TWA; 35 mg/m3 TWA	0.5 ppm TWA [VLE-MP] 0.5 ppm TWA [VLE-MP]	0.5 ppm TWA [VLA-ED]; 1.9 mg/m3 TWA [VLA-ED] 0.5 ppm TWA [VLA-ED]; 1.9 mg/m3 TWA [VLA-ED]
	Ceilings	Not established	0.5 ppm Ceiling (15 min); 1.8 mg/m3 Ceiling (15 min) 0.5 ppm Ceiling (15 min); 1.8 mg/m3 Ceiling (15 min)	Not established	Not established	Not established

n-Propyl Mercaptan (107-03-9)	Ceilings	Not established	0.5 ppm Ceiling (15 min); 1.6 mg/m3 Ceiling (15 min)	Not established	Not established	Not established
Ethyl Mercaptan (75-08-1)	TWAs	Not established	Not established	Not established	0.5 ppm TWA [VLE-MP]	0.5 ppm TWA [VLA-ED]; 1.3 mg/m3 TWA [VLA-ED]
	Ceilings	Not established	0.5 ppm Ceiling (15 min); 1.3 mg/m3 Ceiling (15 min)	10 ppm Ceiling; 25 mg/m3 Ceiling	Not established	Not established
Methyl Mercaptan (74-93-1)	TWAs	Not established	Not established	Not established	0.5 ppm TWA [VLE-MP]	0.5 ppm TWA [VLA-ED]; 1 mg/m3 TWA [VLA-ED]
	Ceilings	Not established	0.5 ppm Ceiling (15 min); 1 mg/m3 Ceiling (15 min)	10 ppm Ceiling; 20 mg/m3 Ceiling	Not established	Not established
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
Methyl Mercaptan (74-93-1)	TWAs	1 ppm LLV (applies to the sum total of the concentrations of Dimethyl disulfide, Dimethyl sulfide and Methyl mercaptan)
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

•Helium (7440-59-7): **Simple Asphyxiants:** (Simple Asphyxiant) | **Simple Asphyxiants:** (Simple Asphyxiant)

Ireland

•Helium (7440-59-7): **Simple Asphyxiants:** (Asphyxiant) | **Simple Asphyxiants:** (Asphyxiant)

Spain

•Helium (7440-59-7): **Simple Asphyxiants:** (simple asphyxiant) | **Simple Asphyxiants:** (simple asphyxiant)

Germany DFG

•Ethyl Mercaptan (75-08-1): **Pregnancy:** (classification not yet possible) | **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to) | **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to) | **Pregnancy:** (classification not yet possible)

8.2 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

LLV = Limit Level Value is the exposure limit for 8-hour work day

MAK = Maximale Arbeitsplatz Konzentration is the maximum permissible concentration

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

TWAEV = Time-Weighted Average Exposure Value

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

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Gas	Appearance/Description	Colorless gas with a rotten cabbage odor.
Color	Colorless	Odor	Rotten cabbage odor.
Odor Threshold	Data lacking		
General Properties			
Boiling Point	-268.94 C(-452.092 F) Helium	Melting Point	-272 C(-457.6 F) Helium
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	Data lacking	Density	Data lacking
Water Solubility	Slightly Soluble Helium	Viscosity	Data lacking
Explosive Properties	Not explosive.	Oxidizing Properties:	Not an oxidizer.
Volatility			
Vapor Pressure	Data lacking	Vapor Density	0.138 Air=1 Helium
Evaporation Rate	Data lacking		
Flammability			
Flash Point	Data lacking	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Not flammable.		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable under normal temperatures and pressures.

10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

10.4 Conditions to avoid

- Excess heat.

10.5 Incompatible materials

- Oxidizing agents, water, steam, acids, bases.

10.6 Hazardous decomposition products

- Toxic carbon monoxide when heated above 1700 deg.C

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Component Name	CAS	Data
Carbon dioxide (<= 1%)	124-38-9	**Acute Toxicity:** ihl-rat LC50:470000 ppm/30M; **Reproductive:** ihl-rat TCLo:6 pph/24H (10D preg)
Methyl Mercaptan (<= 0.04%)	74-93-1	**Acute Toxicity:** ihl-rat LC50:675 ppm
Ethyl Mercaptan (<= 0.02%)	75-08-1	**Acute Toxicity:** orl-rat LD50:682 mg/kg; **Irritation:** eye-rbt 100 mg/24H MOD; skn-rbt 500 mg/24H MLD
n-Propyl Mercaptan (<= 0.009%)	107-03-9	**Acute Toxicity:** orl-rat LD50:1790 mg/kg; ihl-rat LC50:7300 ppm/4H; **Irritation:** eye-rbt 83 mg SEV
n-Butyl Mercaptan (<= 0.003%)	109-79-5	**Acute Toxicity:** orl-rat LD50:1500 mg/kg; ihl-rat LC50:4020 ppm/4H; ihl-rat TCLo:1114 ppm/6H/2W-I; **Irritation:** eye-rbt 83 mg

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

Respiratory sensitization	**EU/CLP** • Classification criteria not met **OSHA HCS 2012** • Classification criteria not met
Serious eye damage/Irritation	**EU/CLP** • Classification criteria not met **OSHA HCS 2012** • Classification criteria not met

Potential Health Effects

Inhalation

Acute (Immediate)
- This material is a simple asphyxiant. May displace or reduce oxygen available for breathing especially in confined spaces.

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.

Key to abbreviations

TC = Toxic Concentration
LD = Lethal Dose
MLD = Mild
MOD = Moderate
SEV = Severe
LC = Lethal Concentration

Section 12 - Ecological Information

12.1 Toxicity

- Material data lacking.

12.2 Persistence and degradability

- Material data lacking.

12.3 Bioaccumulative potential

- Material data lacking.

12.4 Mobility in Soil

- Material data lacking.

12.5 Results of PBT and vPvB assessment

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

12.6 Other adverse effects

- No studies have been found.

Section 13 - Disposal Considerations

13.1 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

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	UN1956	Compressed gas, n.o.s (Helium, Carbon Dioxide)	2.2	NDA	NDA
TDG	UN1956	COMPRESSED GAS, N.O.S. (Helium, Carbon Dioxide)	2.2	NDA	NDA
IMO/IMDG	UN1956	COMPRESSED GAS, N.O.S. (Helium, Carbon Dioxide)	2.2	NDA	NDA
IATA/ICAO	UN1956	Compressed gas, n.o.s (Helium, Carbon Dioxide)	2.2	NDA	NDA

14.6 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.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
- Not relevant.

Section 15 - Regulatory Information

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

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

State Right To Know				
Component	**CAS**	**MA**	**NJ**	**PA**
Carbon dioxide	124-38-9	Yes	Yes	Yes
Methyl Mercaptan	74-93-1	Yes	Yes	Yes
Ethyl Mercaptan	75-08-1	Yes	Yes	Yes
n-Propyl Mercaptan	107-03-9	Yes	Yes	No
n-Butyl Mercaptan	109-79-5	Yes Yes	Yes Yes	Yes Yes
Helium	7440-59-7	Yes Yes	Yes 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
Methyl Mercaptan	74-93-1	Yes	No	Yes	Yes	No
Ethyl Mercaptan	75-08-1	Yes	No	Yes	Yes	No
n-Propyl Mercaptan	107-03-9	Yes	No	Yes	Yes	No
n-Butyl Mercaptan	109-79-5	Yes Yes	No	Yes Yes	Yes Yes	No
Helium	7440-59-7	Yes Yes	No	Yes Yes	Yes Yes	No

Inventory (Con't.)		
Component	**CAS**	**TSCA**
Carbon dioxide	124-38-9	Yes
Methyl Mercaptan	74-93-1	Yes
Ethyl Mercaptan	75-08-1	Yes
n-Propyl Mercaptan	107-03-9	Yes
n-Butyl Mercaptan	109-79-5	Yes Yes
Helium	7440-59-7	Yes Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 A; Uncontrolled product according to WHMIS classification criteria (solid)
- Ethyl Mercaptan 75-08-1 B2
- Helium 7440-59-7 A
- n-Butyl Mercaptan 109-79-5 B2, D1B
- Methyl Mercaptan 74-93-1 A, B1, D1A

Canada - WHMIS - Ingredient Disclosure List

- n-Propyl Mercaptan 107-03-9 1 %
- Carbon dioxide 124-38-9 1 %
- Ethyl Mercaptan 75-08-1 1 %
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 1 %
- Methyl Mercaptan 74-93-1 1 %

Environment

Canada - CEPA - Priority Substances List

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed

- Methyl Mercaptan 74-93-1 Not Listed

China

Environment

China - Ozone Depleting Substances - First Schedule

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

China - Ozone Depleting Substances - Second Schedule

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

China - Ozone Depleting Substances - Third Schedule

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

Other

China - Annex I & II - Controlled Chemicals Lists

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

China - Dangerous Goods List

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 UN1013; UN1845 PG = III; UN2187
- Ethyl Mercaptan 75-08-1 UN2363 PG = I
- Helium 7440-59-7 UN1046; UN1963
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 UN1064

China - Export Control List - Part I Chemicals

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

Europe

Other

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 F; R11 Xn; R20 N; R50-53
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 F+; R12 T; R23 N; R50-53

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 F Xn N R:11-20-50/53 S:(2)-16-25-60-61
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 F+ T N R:12-23-50/53 S:(2)-16-25-60-61

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 S:(2)-16-25-60-61
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 S:(2)-16-25-60-61

Germany

Environment

Germany - TA Luft - Types and Classes

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 organic substance: 5.2.5, Class I
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 organic substance: 5.2.5, Class I
- Methyl Mercaptan 74-93-1 organic substance: 5.2.5, Class I

Germany - Water Classification (VwVwS) - Annex 1

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 ID Number 256, not considered hazardous to water
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

Germany - Water Classification (VwVwS) - Annex 2 - Water Hazard Classes

- n-Propyl Mercaptan 107-03-9 ID Number 144, hazard class 3 - severe hazard to waters
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 ID Number 144, hazard class 3 - severe hazard to waters
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 ID Number 144, hazard class 3 - severe hazard to waters
- Methyl Mercaptan 74-93-1 ID Number 144, hazard class 3 - severe hazard to waters

Germany - Water Classification (VwVwS) - Annex 3

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

Other

Germany - Specifically Regulated Chemicals in TRGS

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

Portugal

Other

Portugal - Prohibited Substances

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

United Kingdom

Environment

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 10000000 kg (qualifying renewable fuel sources are reportable when the total amount of CO2 released is above 10 million kg); 10000000 kg
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed

• Methyl Mercaptan	74-93-1	Not Listed

United Kingdom - Substances Contained in Dangerous Substances or Preparations

• n-Propyl Mercaptan	107-03-9	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Ethyl Mercaptan	75-08-1	Not Listed
• Helium	7440-59-7	Not Listed
• n-Butyl Mercaptan	109-79-5	Not Listed
• Methyl Mercaptan	74-93-1	Not Listed

Other

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

• n-Propyl Mercaptan	107-03-9	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Ethyl Mercaptan	75-08-1	Not Listed
• Helium	7440-59-7	Not Listed
• n-Butyl Mercaptan	109-79-5	Not Listed
• Methyl Mercaptan	74-93-1	Not Listed

United Kingdom - The Red List - Dangerous Substances in Water

• n-Propyl Mercaptan	107-03-9	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Ethyl Mercaptan	75-08-1	Not Listed
• Helium	7440-59-7	Not Listed
• n-Butyl Mercaptan	109-79-5	Not Listed
• Methyl Mercaptan	74-93-1	Not Listed

United States

Labor

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

• n-Propyl Mercaptan	107-03-9	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Ethyl Mercaptan	75-08-1	Not Listed
• Helium	7440-59-7	Not Listed
• n-Butyl Mercaptan	109-79-5	Not Listed
• Methyl Mercaptan	74-93-1	5000 lb TQ

U.S. - OSHA - Specifically Regulated Chemicals

• n-Propyl Mercaptan	107-03-9	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Ethyl Mercaptan	75-08-1	Not Listed
• Helium	7440-59-7	Not Listed
• n-Butyl Mercaptan	109-79-5	Not Listed
• Methyl Mercaptan	74-93-1	Not Listed

Environment

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

• n-Propyl Mercaptan	107-03-9	Not Listed
• Carbon dioxide	124-38-9	Not Listed
• Ethyl Mercaptan	75-08-1	Not Listed
• Helium	7440-59-7	Not Listed
• n-Butyl Mercaptan	109-79-5	Not Listed

- Methyl Mercaptan 74-93-1 Not Listed

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 100 lb final RQ; 45.4 kg final RQ

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 100 lb EPCRA RQ

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 500 lb TPQ

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed

- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 waste number U153

U.S. - RCRA (Resource Conservation & Recovery Act) - U Series Wastes - Acutely Toxic Wastes & Other Hazardous Characteristics

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 waste number U153 (Ignitable waste, Toxic waste)

United States - California

Environment

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

United States - Pennsylvania

Labor

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1

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

- n-Propyl Mercaptan 107-03-9 Not Listed
- Carbon dioxide 124-38-9 Not Listed
- Ethyl Mercaptan 75-08-1 Not Listed
- Helium 7440-59-7 Not Listed
- n-Butyl Mercaptan 109-79-5 Not Listed
- Methyl Mercaptan 74-93-1 Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

Section 16 - Other Information

Relevant Phrases (code & full text)

- H220 - Extremely flammable gas
  H225 - Highly flammable liquid and vapour
  H315 - Causes skin irritation
  H319 - Causes serious eye irritation
  H302 - Harmful if swallowed
  H331 - Toxic if inhaled
  H332 - Harmful if inhaled
  H335 - May cause respiratory irritation
  H336 - May cause drowsiness or dizziness
  H361d - Suspected of damaging the unborn child.
  H400 - Very toxic to aquatic life
  H410 - Very toxic to aquatic life with long lasting effects

  R11 - Highly flammable.
  R12 - Extremely flammable.
  R20 - Harmful by inhalation.
  R22 - Harmful if swallowed.
  R20/22 - Harmful by inhalation and if swallowed.
  R23 - Toxic by inhalation.
  R36/37/38 - Irritating to eyes, respiratory system and skin.
  R50 - Very toxic to aquatic organisms.
  R53 - May cause long-term adverse effects in the aquatic environment.
  R63 - Possible risk of harm to the unborn child.

Last Revision Date	• 05/July/2013
Preparation Date	• 05/July/2013
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