

## Safety Data Sheet



### Section 1: Identification

#### Product identifier

**Product Name** • Carbon Dioxide (0.0001 - 0.5%), Carbon Monoxide (0.0001 - 0.0025%), Nitric Oxide (0.0001 - 0.0025%), Sulfur Dioxide ( 0.0001 - 0.0002%), Nitrogen (Balance)

**Product Code** • M-C5037/E-2

#### 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

**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** • Compressed Gas - H280  
Simple Asphyxiant

#### Label elements

**OSHA HCS 2012**

#### WARNING



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

#### Precautionary statements

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

**HCS 2012 Other Information** • Mixtures containing carbon dioxide can increase respiration and heart rate.

## 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

## Classification of the substance or mixture

### WHMIS

- Compressed Gas - A

## Label elements

### WHMIS



- Compressed Gas - A

## 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).

## Other information

- Mixtures containing carbon dioxide can increase respiration and heart rate.

## Section 3 - Composition/Information on Ingredients

## Substances

- Material does not meet the criteria of a substance.

## Mixtures

Hazardous Components					
Chemical Name	Identifiers	%(weight)	LD50/LC50	Classifications According to Regulation/Directive	Comments
Nitrogen	CAS:7727-37-9	99.4948% TO 99.9996%	NDA	OSHA HCS 2012: Press. Gas - Comp.; Simple Asphyxiant	Balance
Carbon dioxide	CAS:124-38-9	0.0001% TO 0.5%	Inhalation-Rat LC50 • 470000 ppm 30 Minute(s)	OSHA HCS 2012: Press. Gas - Comp.; Simple Asphyxiant	NDA
Carbon monoxide	CAS:630-08-0	0.0001% TO 0.0025%	Inhalation-Rat LC50 • 1807 ppm 4 Hour(s)	OSHA HCS 2012: Flam. Gas; Press. Gas - Comp.; Repr 1A; Acute Tox. 3 (inhl)	NDA

Nitric Oxide	CAS:10102-43-9	0.0001% TO 0.0025%	Inhalation-Rat LC50 • 160 mg/m <sup>3</sup>	OSHA HCS 2012: Press. Gas - Comp; Ox. Gas 1; STOT SE Cat. 1, TO - Lung, Blood (Methemoglobin Former); Acute Tox. 1(inhl)	NDA
Sulfur dioxide	CAS:7446-09-5	0.0001% TO 0.0002%	Inhalation-Rat LC50 • 2168 mg/m <sup>3</sup>	OSHA HCS 2012: Press. Gas - Comp.; Muta. 2; Acute Tox. 3 (inhl); Repr. 2	NDA

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.

Always wear thermal protective clothing when handling refrigerated/cryogenic liquids. 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.

### Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

## 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.

### Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

## Section 8 - Exposure Controls/Personal Protection

### Control parameters

**Exposure Limits/Guidelines** • Currently there are no applicable exposure limits established for this material.

Exposure Limits/Guidelines						
	Result	ACGIH	Canada Ontario	Canada Quebec	China	Germany DFG
Carbon monoxide (630-08-0)	Ceilings	Not established	Not established	Not established	20 mg/m3 Ceiling [MAC] (high altitude area, 2000-3000m); 15 mg/m3 Ceiling [MAC] (high altitude area, >3000m)	60 ppm Peak; 70 mg/m3 Peak
	STELs	Not established	100 ppm STEL	200 ppm STEV; 230 mg/m3 STEV	30 mg/m3 STEL (not in high altitude area)	Not established
	TWAs	25 ppm TWA	25 ppm TWA	35 ppm TWA EV; 40 mg/m3 TWA EV	20 mg/m3 TWA (not in high altitude area)	Not established
	MAKs	Not established	Not established	Not established	Not established	30 ppm TWA MAK; 35 mg/m3 TWA MAK
Nitric Oxide (10102-43-9)	STELs	Not established	Not established	Not established	30 mg/m3 STEL	Not established
	TWAs	25 ppm TWA	25 ppm TWA	25 ppm TWA EV; 31 mg/m3 TWA EV	15 mg/m3 TWA	Not established
	Ceilings	Not established	Not established	Not established	Not established	1 ppm Peak; 1.26 mg/m3 Peak
	MAKs	Not established	Not established	Not established	Not established	0.5 ppm TWA MAK; 0.63 mg/m3 TWA MAK
Sulfur dioxide (7446-09-5)	STELs	0.25 ppm STEL	5 ppm STEL; 10.4 mg/m3 STEL	5 ppm STEV; 13 mg/m3 STEV	10 mg/m3 STEL	Not established
	TWAs	Not established	2 ppm TWA; 5.2 mg/m3 TWA	2 ppm TWA EV; 5.2 mg/m3 TWA EV	5 mg/m3 TWA	Not established
	Ceilings	Not established	Not established	Not established	Not established	0.5 ppm Peak; 1.3 mg/m3 Peak
	MAKs	Not established	Not established	Not established	Not established	0.5 ppm TWA MAK; 1.3 mg/m3 TWA MAK
Exposure Limits/Guidelines (Con't.)						
	Result	Germany TRGS	NIOSH	OSHA	Singapore	
Carbon monoxide (630-08-0)	TWAs	30 ppm TWA AGW (The risk of damage to the embryo or fetus cannot be excluded even when AGW and BGW values are observed, exposure factor 1); 35 mg/m3 TWA AGW (The risk of damage to the embryo or fetus cannot be excluded even when AGW and BGW values	35 ppm TWA; 40 mg/m3 TWA	50 ppm TWA; 55 mg/m3 TWA	25 ppm PEL; 29 mg/m3 PEL	

		are observed, exposure factor 1)			
	Ceilings	Not established	200 ppm Ceiling; 229 mg/m3 Ceiling	Not established	Not established
Nitric Oxide (10102-43-9)	TWAs	Not established	25 ppm TWA; 30 mg/m3 TWA	25 ppm TWA; 30 mg/m3 TWA	25 ppm PEL; 31 mg/m3 PEL
Sulfur dioxide (7446-09-5)	STELs	Not established	5 ppm STEL; 13 mg/m3 STEL	Not established	5 ppm STEL; 13 mg/m3 STEL
	TWAs	1 ppm TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, exposure factor 1); 2.5 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 1)	2 ppm TWA; 5 mg/m3 TWA	5 ppm TWA; 13 mg/m3 TWA	2 ppm PEL; 5.2 mg/m3 PEL

## Exposure Control Notations

### Singapore

- Nitric Oxide (10102-43-9): **Odour Threshold - High:** (1.2 mg/m3) | **Odour Threshold - Low:** (0.4 mg/m3)
- Sulfur dioxide (7446-09-5): **Odour Threshold - High:** (12.5 mg/m3) | **Odour Threshold - Low:** (1.2 mg/m3) | **Irritation:** (5 mg/m3)

### ACGIH

- Sulfur dioxide (7446-09-5): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)

### Germany DFG

- Carbon monoxide (630-08-0): **Pregnancy:** (risk to embryo/fetus probable)
- Nitric Oxide (10102-43-9): **Pregnancy:** (classification not yet possible)
- Sulfur dioxide (7446-09-5): **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to)

## Exposure Limits Supplemental

### ACGIH

- Carbon monoxide (630-08-0): **BEIs:** (3.5 % of hemoglobin Medium: blood Time: end of shift Parameter: Carboxyhemoglobin (background, nonspecific); 20 ppm Medium: end-exhaled air Time: end of shift Parameter: Carbon monoxide (background, nonspecific))
- Nitric Oxide (10102-43-9): **BEIs:** (1.5 % of hemoglobin Medium: blood Time: during or end of shift Parameter: Methemoglobin (background, nonspecific, semi-quantitative))

## 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

#### Pictograms



#### 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.

<b>Skin/Body</b>	<ul style="list-style-type: none"> <li>Wear leather gloves when handling cylinders.</li> </ul>
<b>Environmental Exposure Controls</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>

## Section 9 - Physical and Chemical Properties

### Information on Physical and Chemical Properties

Material Description			
Physical Form	Gas	Appearance/Description	Colorless gas with sharp, irritating odor.
Color	Colorless	Odor	Sharp, irritating odor.
Taste	Data lacking	Particulate Type	Not relevant
Particulate Size	Not relevant	Aerosol Type	Not relevant
Odor Threshold	Not relevant	Physical and Chemical Properties	Data lacking
General Properties			
Boiling Point	Data lacking	Melting Point	Data lacking
Decomposition Temperature	Data lacking	Heat of Decomposition	Data lacking
pH	Not relevant	Specific Gravity/Relative Density	Data lacking
Density	Data lacking	Bulk Density	Data lacking
Water Solubility	Data lacking	Solvent Solubility	Data lacking
Viscosity	Not relevant	Explosive Properties	Not explosive.
Oxidizing Properties:	Not an oxidizing gas.		
Volatility			
Vapor Pressure	Data lacking	Vapor Density	0.9698 Air=1
Evaporation Rate	Data lacking	VOC (Wt.)	Data lacking
VOC (Vol.)	Data lacking	Volatiles (Wt.)	Data lacking
Volatiles (Vol.)	Data lacking		
Flammability			
Flash Point	Not relevant	UEL	Not relevant
LEL	Not relevant	Autoignition	Not relevant
Self-Accelerating Decomposition Temperature (SADT)	Not relevant	Heat of Combustion ( $\Delta H_c$ )	Not relevant
Burning Time	Not relevant	Flame Duration	Not relevant
Flame Height	Not relevant	Flame Extension	Not relevant
Ignition Distance	Not relevant	Flammability (solid, gas)	Not flammable.
Environmental			
Half-Life	Data lacking	Octanol/Water Partition coefficient	Data lacking
Coefficient of water/oil distribution	Data lacking	Bioaccumulation Factor	Data lacking
Bioconcentration Factor	Data lacking	Biochemical Oxygen Demand BOD/BOD5	Data lacking



Chemical Oxygen Demand	Data lacking	Persistence	Data lacking
Degradation	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

- No data available

### 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

Component Name	CAS	Data
Carbon dioxide (0.0001% TO 0.5%)	124-38-9	<b>Acute Toxicity:</b> ihl-rat LC50:470000 ppm/30M; <b>Reproductive:</b> ihl-rat TCLo:6 pph/24H (10D preg)
Carbon monoxide (0.0001% TO 0.0025%)	630-08-0	<b>Acute Toxicity:</b> ihl-rat LC50:1807 ppm/4H; <b>Reproductive:</b> ihl-rat TCLo:150 ppm (0-20D preg)
Nitric Oxide (0.0001% TO 0.0025%)	10102-43-9	<b>Acute Toxicity:</b> ihl-rat LC50:160 mg/m3; <b>Mutagen:</b> msc-rat-ihl 27 ppm/3H-C
Sulfur dioxide (0.0001% TO 0.0002%)	7446-09-5	<b>Acute Toxicity:</b> ihl-rat LC50:2520 ppm/1H; <b>Irritation:</b> eye-rbt 6 ppm/32D MLD; <b>Mutagen:</b> dna-rat-ihl 72 mg/kg/300D-I; <b>Reproductive:</b> ihl-mus TCLo:25 ppm/7H (6-15D preg)

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

## Potential Health Effects

### Inhalation

#### Acute (Immediate)

- 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.

### Mutagenic Effects

- No data available.

### 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.

### Reproductive Effects

- No data available.

## 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

- 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

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

#### Other information

- DOT** • Nitric Oxide has a reportable quantity of 10 lbs (4.54 kg) as listed in Appendix A to 49 CFR 172.101.

## 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
Nitrogen	7727-37-9	Yes	Yes	Yes
Carbon dioxide	124-38-9	Yes	Yes	Yes
Carbon monoxide	630-08-0	Yes	Yes	Yes
Nitric Oxide	10102-43-9	Yes	Yes	Yes
Sulfur dioxide	7446-09-5	Yes	Yes	Yes

Inventory				
Component	CAS	Canada DSL	Canada NDSL	TSCA
Nitrogen	7727-37-9	Yes	No	Yes
Carbon dioxide	124-38-9	Yes	No	Yes
Carbon monoxide	630-08-0	Yes	No	Yes
Nitric Oxide	10102-43-9	Yes	No	Yes
Sulfur dioxide	7446-09-5	Yes	No	Yes

## Canada

### Labor

#### Canada - WHMIS - Classifications of Substances

- Carbon monoxide 630-08-0 0.0001% TO 0.0025% A, B1, D1A, D2A
- Nitric Oxide 10102-43-9 0.0001% TO 0.0025% A, C, D1A, E
- Sulfur dioxide 7446-09-5 0.0001% TO 0.0002% A, D1A, D2B, E
- Carbon dioxide 124-38-9 0.0001% TO 0.5% A; Uncontrolled product according to WHMIS classification criteria (solid)
- Nitrogen 7727-37-9 99.4948% TO 99.9996% A

#### Canada - WHMIS - Ingredient Disclosure List

- Carbon monoxide 630-08-0 0.0001% TO 0.0025% 0.1 %
- Nitric Oxide 10102-43-9 0.0001% TO 0.0025% 1 %
- Sulfur dioxide 7446-09-5 0.0001% TO 0.0002% 1 %
- Carbon dioxide 124-38-9 0.0001% TO 0.5% 1 %
- Nitrogen 7727-37-9 99.4948% TO 99.9996% Not Listed

### Environment

#### Canada - CEPA - Priority Substances List

- Carbon monoxide 630-08-0 0.0001% TO 0.0025% Not Listed
- Nitric Oxide 10102-43-9 0.0001% TO 0.0025% Not Listed
- Sulfur dioxide 7446-09-5 0.0001% TO 0.0002% Not Listed
- Carbon dioxide 124-38-9 0.0001% TO 0.5% Not Listed
- Nitrogen 7727-37-9 99.4948% TO 99.9996% Not Listed

## United States

### Labor

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

- Carbon monoxide 630-08-0 0.0001% TO 0.0025% Not Listed
- Nitric Oxide 10102-43-9 0.0001% TO 0.0025% 250 lb TQ
- Sulfur dioxide 7446-09-5 0.0001% TO 0.0002% 1000 lb TQ (liquid)
- Carbon dioxide 124-38-9 0.0001% TO 0.5% Not Listed
- Nitrogen 7727-37-9 99.4948% TO 99.9996% Not Listed

**U.S. - OSHA - Specifically Regulated Chemicals**

• Carbon monoxide	630-08-0	0.0001% TO 0.0025%	Not Listed
• Nitric Oxide	10102-43-9	0.0001% TO 0.0025%	Not Listed
• Sulfur dioxide	7446-09-5	0.0001% TO 0.0002%	Not Listed
• Carbon dioxide	124-38-9	0.0001% TO 0.5%	Not Listed
• Nitrogen	7727-37-9	99.4948% TO 99.9996%	Not Listed

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

• Carbon monoxide	630-08-0	0.0001% TO 0.0025%	Not Listed
• Nitric Oxide	10102-43-9	0.0001% TO 0.0025%	Not Listed
• Sulfur dioxide	7446-09-5	0.0001% TO 0.0002%	Not Listed
• Carbon dioxide	124-38-9	0.0001% TO 0.5%	Not Listed
• Nitrogen	7727-37-9	99.4948% TO 99.9996%	Not Listed

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

• Carbon monoxide	630-08-0	0.0001% TO 0.0025%	Not Listed
• Nitric Oxide	10102-43-9	0.0001% TO 0.0025%	10 lb final RQ (releases to the air in amounts <1000 pounds per 24 hours which are the result of combustion and combustion-related activities are exempt from the notification requirements per 40 CFR 302.6); 4.54 kg final RQ (releases to the air in amounts <1000 pounds per 24 hours which are the result of combustion and combustion-related activities are exempt from the notification requirements per 40 CFR 302.6)
• Sulfur dioxide	7446-09-5	0.0001% TO 0.0002%	Not Listed
• Carbon dioxide	124-38-9	0.0001% TO 0.5%	Not Listed
• Nitrogen	7727-37-9	99.4948% TO 99.9996%	Not Listed

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

• Carbon monoxide	630-08-0	0.0001% TO 0.0025%	Not Listed
• Nitric Oxide	10102-43-9	0.0001% TO 0.0025%	Not Listed
• Sulfur dioxide	7446-09-5	0.0001% TO 0.0002%	Not Listed
• Carbon dioxide	124-38-9	0.0001% TO 0.5%	Not Listed
• Nitrogen	7727-37-9	99.4948% TO 99.9996%	Not Listed

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

• Carbon monoxide	630-08-0	0.0001% TO 0.0025%	Not Listed
• Nitric Oxide	10102-43-9	0.0001% TO 0.0025%	10 lb EPCRA RQ (Releases to the air in amounts <1000 pounds per 24 hours which are the result of combustion and combustion-related activities are exempt from the notification requirements per 40 CFR 355.31)

• Sulfur dioxide	7446-09-5	0.0001% TO 0.0002%	500 lb EPCRA RQ
• Carbon dioxide	124-38-9	0.0001% TO 0.5%	Not Listed
• Nitrogen	7727-37-9	99.4948% TO 99.9996%	Not Listed

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

• Carbon monoxide	630-08-0	0.0001% TO 0.0025%	Not Listed
• Nitric Oxide	10102-43-9	0.0001% TO 0.0025%	100 lb TPQ
• Sulfur dioxide	7446-09-5	0.0001% TO 0.0002%	500 lb TPQ
• Carbon dioxide	124-38-9	0.0001% TO 0.5%	Not Listed
• Nitrogen	7727-37-9	99.4948% TO 99.9996%	Not Listed

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

• Carbon monoxide	630-08-0	0.0001% TO 0.0025%	Not Listed
• Nitric Oxide	10102-43-9	0.0001% TO 0.0025%	Not Listed
• Sulfur dioxide	7446-09-5	0.0001% TO 0.0002%	Not Listed
• Carbon dioxide	124-38-9	0.0001% TO 0.5%	Not Listed
• Nitrogen	7727-37-9	99.4948% TO 99.9996%	Not Listed

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

• Carbon monoxide	630-08-0	0.0001% TO 0.0025%	Not Listed
• Nitric Oxide	10102-43-9	0.0001% TO 0.0025%	Not Listed
• Sulfur dioxide	7446-09-5	0.0001% TO 0.0002%	Not Listed
• Carbon dioxide	124-38-9	0.0001% TO 0.5%	Not Listed
• Nitrogen	7727-37-9	99.4948% TO 99.9996%	Not Listed

**United States - California****Environment****U.S. - California - Proposition 65 - Carcinogens List**

• Carbon monoxide	630-08-0	0.0001% TO 0.0025%	Not Listed
• Nitric Oxide	10102-43-9	0.0001% TO 0.0025%	Not Listed
• Sulfur dioxide	7446-09-5	0.0001% TO 0.0002%	Not Listed
• Carbon dioxide	124-38-9	0.0001% TO 0.5%	Not Listed
• Nitrogen	7727-37-9	99.4948% TO 99.9996%	Not Listed

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

• Carbon monoxide	630-08-0	0.0001% TO 0.0025%	developmental toxicity, initial date 7/1/89
• Nitric Oxide	10102-43-9	0.0001% TO 0.0025%	Not Listed
• Sulfur dioxide	7446-09-5	0.0001% TO 0.0002%	developmental toxicity, initial date 7/29/11
• Carbon dioxide	124-38-9	0.0001% TO 0.5%	Not Listed

- Nitrogen 7727-37-9 99.4948% TO 99.9996% Not Listed

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

- Carbon monoxide 630-08-0 0.0001% TO 0.0025% Not Listed
- Nitric Oxide 10102-43-9 0.0001% TO 0.0025% Not Listed
- Sulfur dioxide 7446-09-5 0.0001% TO 0.0002% Not Listed
- Carbon dioxide 124-38-9 0.0001% TO 0.5% Not Listed
- Nitrogen 7727-37-9 99.4948% TO 99.9996% Not Listed

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

- Carbon monoxide 630-08-0 0.0001% TO 0.0025% Not Listed
- Nitric Oxide 10102-43-9 0.0001% TO 0.0025% Not Listed
- Sulfur dioxide 7446-09-5 0.0001% TO 0.0002% Not Listed
- Carbon dioxide 124-38-9 0.0001% TO 0.5% Not Listed
- Nitrogen 7727-37-9 99.4948% TO 99.9996% Not Listed

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

- Carbon monoxide 630-08-0 0.0001% TO 0.0025% Not Listed
- Nitric Oxide 10102-43-9 0.0001% TO 0.0025% Not Listed
- Sulfur dioxide 7446-09-5 0.0001% TO 0.0002% Not Listed
- Carbon dioxide 124-38-9 0.0001% TO 0.5% Not Listed
- Nitrogen 7727-37-9 99.4948% TO 99.9996% Not Listed

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

- Carbon monoxide 630-08-0 0.0001% TO 0.0025% Not Listed
- Nitric Oxide 10102-43-9 0.0001% TO 0.0025% Not Listed
- Sulfur dioxide 7446-09-5 0.0001% TO 0.0002% Not Listed
- Carbon dioxide 124-38-9 0.0001% TO 0.5% Not Listed
- Nitrogen 7727-37-9 99.4948% TO 99.9996% Not Listed

## United States - Pennsylvania

### Labor

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

- Carbon monoxide 630-08-0 0.0001% TO 0.0025%
- Nitric Oxide 10102-43-9 0.0001% TO 0.0025%
- Sulfur dioxide 7446-09-5 0.0001% TO 0.0002%
- Carbon dioxide 124-38-9 0.0001% TO 0.5% Not Listed
- Nitrogen 7727-37-9 99.4948% TO 99.9996% Not Listed

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

• Carbon monoxide	630-08-0	0.0001% TO 0.0025%	Not Listed
• Nitric Oxide	10102-43-9	0.0001% TO 0.0025%	Not Listed
• Sulfur dioxide	7446-09-5	0.0001% TO 0.0002%	Not Listed
• Carbon dioxide	124-38-9	0.0001% TO 0.5%	Not Listed
• Nitrogen	7727-37-9	99.4948% TO 99.9996%	Not Listed

## Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

## Section 16 - Other Information

### Last Revision Date

- 24/September/2012

### Preparation Date

- 24/September/2012

### 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