

Safety Data Sheet



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

1.1 Product identifier

Product Name • Helium (1-49%), Argon (Balance)
Product Code • M-22111/E-1

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

Relevant identified use(s) • Calibration Gas

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

Section 2: Hazards Identification

EU/EEC

According to Regulation (EC) No 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



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.
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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

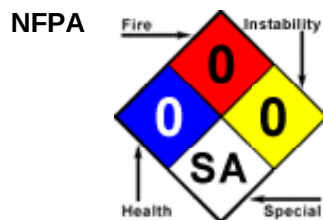


- Compressed Gas - A

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).
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2.4 Other information



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	Comments
Helium	CAS:7440-59-7 EINECS:231-168-5	1% TO 49%	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.	NDA
Argon	CAS:7440-37-1 EC Number:231-147-0	51% TO 99%	NDA	EU DSD/DPD: Not Classified - Criteria not met EU CLP: Self Classified: Press. Gas - Comp., H280 OSHA HCS 2012: Press. Gas - Comp	Balance

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

- 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.

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.

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 • None known.

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 • None known.

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

- No special environmental precautions necessary.

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.
Allow substance to evaporate.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and 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

- Currently there are no applicable exposure limits established for this material.

Exposure Control Notations

Portugal

- Helium (7440-59-7): **Simple Asphyxiants:** (Simple Asphyxiant)
- Argon (7440-37-1): **Simple Asphyxiants:** (Simple Asphyxiant)

Ireland

- Helium (7440-59-7): **Simple Asphyxiants:** (Asphyxiant)
- Argon (7440-37-1): **Simple Asphyxiants:** (Asphyxiant)

Spain

- Helium (7440-59-7): **Simple Asphyxiants:** (simple asphyxiant)
- Argon (7440-37-1): **Simple Asphyxiants:** (simple asphyxiant)

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.

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Gas	Appearance/Description	Colorless compressed gas with no odor.
Color	Colorless	Odor	Odorless
Odor Threshold	Data lacking		
General Properties			
Boiling Point	-189.5 C(-309.1 F) Argon	Melting Point	-189.4 C(-308.92 F) Argon
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	Data lacking	Water Solubility	Data lacking
Solvent Solubility	Data lacking	Viscosity	Data lacking
Explosive Properties	Not explosive.	Oxidizing Properties:	Not an oxidizer.
Volatility			
Vapor Pressure	Data lacking	Vapor Density	1.38 Air=1 Argon
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	Bioaccumulation Factor	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

- None known.

10.6 Hazardous decomposition products

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

Section 11 - Toxicological Information

11.1 Information on toxicological effects

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

Route(s) of entry/exposure

- Inhalation, Skin, Eye

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)

- No data available

Eye

Acute (Immediate)

- Under normal conditions of use, no health effects are expected.

Chronic (Delayed)

- No data available

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.

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 adverse ecological effects are expected.

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 (Argon, Helium)	2.2	NDA	NDA
TDG	UN1956	COMPRESSED GAS, N.O.S. (Argon, Helium)	2.2	NDA	NDA
IMO/IMDG	UN1956	COMPRESSED GAS, N.O.S. (Argon, Helium)	2.2	NDA	NDA
IATA/ICAO	UN1956	Compressed gas, n.o.s (Argon, Helium)	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** • Pressure(Sudden Release of)

State Right To Know				
Component	CAS	MA	NJ	PA
Argon	7440-37-1	Yes	Yes	Yes
Helium	7440-59-7	Yes	Yes	Yes

Inventory						
Component	CAS	Canada DSL	Canada NDSL	China	EU EINECS	EU ELNICS
Argon	7440-37-1	Yes	No	Yes	Yes	No
Helium	7440-59-7	Yes	No	Yes	Yes	No

Inventory (Con't.)		
Component	CAS	TSCA
Argon	7440-37-1	Yes
Helium	7440-59-7	Yes

Australia**Labor****Australia - Work Health and Safety Regulations - Hazardous Substances Requiring Health Monitoring**

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

Australia - High Volume Industrial Chemicals List

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

Australia - List of Designated Hazardous Substances - Classification

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

Environment**Australia - National Pollutant Inventory (NPI) Substance List**

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

Australia - Ozone Protection Act - Scheduled Substances

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

Australia - Priority Existing Chemical Program

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

Canada**Labor****Canada - WHMIS - Classifications of Substances**

• Argon	7440-37-1	A
• Helium	7440-59-7	A

Canada - WHMIS - Ingredient Disclosure List

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

Environment**Canada - CEPA - Priority Substances List**

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

China - Ozone Depleting Substances - Second Schedule

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

China - Ozone Depleting Substances - Third Schedule

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

China - Dangerous Goods List

• Argon	7440-37-1	UN1006; UN1951
• Helium	7440-59-7	UN1046; UN1963

China - Export Control List - Part I Chemicals

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

Germany**Environment****Germany - TA Luft - Types and Classes**

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

Germany - Water Classification (VwVwS) - Annex 1

• Argon	7440-37-1	ID Number 1348, not considered hazardous to water
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

Germany - Water Classification (VwVwS) - Annex 3

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

United Kingdom - Substances Contained in Dangerous Substances or Preparations

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

United Kingdom - The Red List - Dangerous Substances in Water

• Argon	7440-37-1	Not Listed
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• Helium	7440-59-7	Not Listed
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United States

Labor

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

Environment

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

United States - California

Environment

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

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

• Argon	7440-37-1	Not Listed
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• Helium	7440-59-7	Not Listed
U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)		
• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Female		
• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Male		
• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

United States - Pennsylvania

Labor

U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List		
• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances		
• Argon	7440-37-1	Not Listed
• Helium	7440-59-7	Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

Section 16 - Other Information

Last Revision Date	• 08/October/2014
Preparation Date	• 08/October/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