

Material Safety Data Sheet

Prepared according to US OSHA, GMA, ANSI and Canadian WHMIS Standards.



Focus Medical Gases
Machines to Molecules

Air, compressed

Section 1. Chemical product and company identification

Commercial name(s)	: Air, compressed
MSDS no.	10003
Product use	Breathing, purging, general analytical or synthetic chemical uses.
Manufactured/supplied Address	2700 Post Oak Drive Houston, TX 77056 8228
Emergency telephone number	CHEMTREC: 1-800-424-9300
Telephone no.	
GENERAL MSDS INFORMATION	1-(713)-896-2896
Fax on Demand	1 (800) 231 1366

Section 2. Hazards identification

Physical state	: Gas.
OSHA/HCS status	: This material is classified hazardous under OSHA regulations in the United States and the WHMIS Controlled Product Regulation in Canada.
Emergency overview	: CAUTION! HIGH PRESSURE GAS. Keep away from heat (<52°C/125°F). Extremely hazardous gas under pressure. Keep cylinder valve closed when the product is not used.
Routes of entry	: Inhalation. Dermal contact. Eye contact.
Potential acute health effects	
Inhalation	: No known significant effects or critical hazards.
Skin	: No known significant effects or critical hazards.
Eyes	: No known significant effects or critical hazards.
Ingestion	: Since the product is a gas, it will probably be inhaled rather than ingested. See above.
Potential chronic health effects	: Carcinogenic effects: Not classified or listed by IARC, NTP, OSHA, EU and ACGIH. Mutagenic effects: Not available. Teratogenic effects: Not available.
Over-exposure signs/symptoms	
Inhalation	: No specific data.
Ingestion	: No specific data.
Skin	: No specific data.
Eyes	: No specific data.
Medical conditions aggravated by over-exposure	: None known.

See toxicological information (section 11)

Section 3. Composition, Information on Ingredients

	CAS number	mole %
Canada		
Air (*)	132259-10-0	100
(*) Composed of the ingredients below.		
Oxygen	7782-44-7	21
Nitrogen	7727-37-9	78

United States

Chemical name	CAS #	mole %	Occupational exposure limits	IDLH
Air(*)	132259-10-0	100		-
(*) Composed of the ingredients below.				
Oxygen	7782 44 7	21	Not applicable.	NE
Nitrogen	7727-37-8	79	There are no specific exposure limits for this gas. This gas is a simple asphyxiant (SA). Oxygen levels should be maintained above 19.5%.	NE

NE: Not Established

C: Ceiling Limit

See Section 16 for possible acronym definitions

See Sections 8, 11, 14 and 15 for details.

Section 4. First aid measures

- Inhalation** : Not applicable. Get medical attention if symptoms occur.
- Skin contact** : Not applicable. Get medical attention if symptoms occur.
- Eye contact** : Not applicable. Get medical attention if symptoms occur.
- Ingestion** : Since the product is a gas, it will probably be inhaled rather than ingested. See above.
- Notes to physician** : No special remark under normal condition of use. In case of inhalation under high pressure environments, the medical doctor must be warned that the person may suffer from symptoms similar to hyperoxia.

Section 5. Fire fighting measures

- Flammability of the product** : Non-flammable.
May accelerate combustion.
- Products of combustion** : No specific data.
- Explosion hazards in the presence of various substances** : Container explosion may occur under fire conditions or when heated.
- Fire-fighting media and instructions** : Use an extinguishing agent suitable for the surrounding fire.
- Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

- Personal precautions** : No special precaution is required.
- Environmental precautions** : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up** : Immediately contact emergency personnel. Stop leak if without risk. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

- Handling** : Valve protection caps must remain in place unless cylinder is secured with valve outlet piped to usage point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure regulator when connecting cylinder to lower pressure piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow to the cylinder. Do not tamper with (valve) safety device. Close valve after each use and when empty.
- Storage** : Protect cylinders from physical damage. Store in cool, dry, well-ventilated area of non-combustible construction away from heavy traffic areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 52°C/125°F. Cylinders must be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Post "No Smoking or Open Flames" signs in the storage or use area. There should be no source of ignition in the storage or use area.

Section 8. Exposure controls/personal protection

- Engineering controls** : Use only in well ventilated areas.
- Personal protection**
- Respiratory** : Not required under normal conditions of use.
- Hands** : Not required under normal conditions of use.
- Eyes** : Safety glasses with side shields.
- Skin/Body** : Metal cap, safety shoes are recommended when handling cylinders.



Some applications of this product may require additional or other specific protective clothings. Please consult your supervisor.

- Personal protection in case of a major leak** : Safety glasses with side shields, goggles or face shield. Impervious gloves. Protective clothing. Metal cap, safety shoes. Wear MSHA/NIOSH-approved self-contained breathing apparatus or equivalent and full protective gear.

Product name	Exposure limits
Canada	
Oxygen	NE
Nitrogen	Simple asphyxiant. (NE)
United States	
Oxygen	NE
Nitrogen	Simple asphyxiant. (NE)

NE: Not Established

Section 9. Physical and chemical properties

- Physical state** : Gas.
- Color** : Colorless.
- Odor** : Odorless.
- Boiling/condensation point** : 194.4°C (317.9°F)
- Vapor density** : 1 [Air = 1]

Section 10. Stability and reactivity

- Stability and reactivity** : The product is stable.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Hazardous polymerization** : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Acute Effects

- Inhalation** : No known significant effects or critical hazards.
- Skin** : No known significant effects or critical hazards.
- Eyes** : No known significant effects or critical hazards.
- Ingestion** : Since the product is a gas, it will probably be inhaled rather than ingested. See above.
- Potential chronic health effects** : Carcinogenic effects: Not classified or listed by IARC, NTP, OSHA, EU and ACGIH.
Mutagenic effects: Not available.
Teratogenic effects: No. available.

Section 12. Ecological information




- Products of degradation** : These gases are released as is in the atmosphere.

Section 13. Disposal considerations

- Disposal** : Residual materials contained in customer owned cylinders should be disposed of in accordance with Federal, State and Local regulations on waste management. For residual materials contained in cylinders owned by Air Liquide, contact Sales or Customer Service to determine appropriate disposal. Do not return cylinders without authorization from Air Liquide.

14. Transport information

AERG : 122

Regulatory information	Proper shipping name	Class	UN number	PG	Label
UN / IMDG / IATA Classification	AIR, COMPRESSED	2.2	UN1002	-	
DOT Classification	AIR, COMPRESSED	2.2	UN1002	-	
TDG Classification	AIR, COMPRESSED	2.2	UN1002	-	
Additional information	UN	IMDG	IATA	DOT	TDG

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 and should be discouraged.

Section 15. Regulatory information

Canada

WHMIS (Canada) : Class A: Compressed gas.



CEPA Toxic substances: None of the components are listed.

Canadian ARET: None of the components are listed.

Canadian NPRI: None of the components are listed.

Alberta Designated Substances: None of the components are listed.

Ontario Designated Substances: None of the components are listed.

Quebec Designated Substances: None of the components are listed.

United States

OSHA HAZARD COMMUNICATION STANDARD (29CFR PART 1910.1200).

Compressed gas

SARA 302/304 emergency planning and notification: No products were found.

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.

CERCLA: Hazardous substances.: No products were found.

US INVENTORY (TSCA)

United States inventory (TSCA 8b): Listed on inventory.

State regulations

California prop. 65: No products were found.

Connecticut Carcinogen Reporting: None of the components are listed.

Connecticut Hazardous Material Survey: None of the components are listed.

Florida substances: None of the components are listed.

Illinois Chemical Safety Act: None of the components are listed.

Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.

Louisiana Reporting: None of the components are listed.

Louisiana Spill: None of the components are listed.

Massachusetts Spill: None of the components are listed.

Massachusetts Substances: The following components are listed: Nitrogen;Oxygen

Michigan Critical Material: None of the components are listed.

Minnesota Hazardous Substances: None of the components are listed.

New Jersey Hazardous Substances: The following components are listed: Nitrogen;Oxygen

New Jersey Spill: None of the components are listed.

New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.

New York Acutely Hazardous Substances: None of the components are listed.

New York Toxic Chemical Release Reporting: None of the components are listed.

Pennsylvania RTK Hazardous Substances: The following components are listed: Nitrogen;Oxygen

Rhode Island Hazardous Substances: None of the components are listed.

Section 16. Other information

Hazardous Material Information System (U.S.A.) :

Health	0
Fire hazard	0
Reactivity	0
Personal protection	A

National Fire Protection Association (U.S.A.) :



Consult an Industrial Hygienist or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

Further information about gas mixtures can be found in pamphlets published by: Compressed Gas Association Inc (CGA), 4221 Walney Road, 5th floor, Chantilly, VA 20151-2923 Telephone: (703) 788-2700.

Acronyms :

- ACGIH: American Conference of Governmental Industrial Hygiene.
- IARC: International Agency for Research on Cancer.
- NIOSH: National Institute of Occupational Safety and Health.
- OSHA: Occupational Safety and Health Administration
- NTP: National Toxicology program.
- OECD: Organisation for Economic Co-operation and Development.
- PEL: Permissible Exposure Limit.
- IDLH: Immediately Dangerous to Life and Health.
- NE: Not established.
- C: Ceiling Limit.
- DSL: Domestic Substance List.
- NDSL: Non-Domestic Substance List.
- CFR: Code of Federal Regulations.
- TSCA: Toxic Substance Control Act.

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Notice to reader

This Material Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200, American National Standard Institute Z400.1, 2004, the Canadian Workplace Hazardous Material Information Systems (WHMIS). Other government regulations must be reviewed for applicability to this gas mixture. 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.

Trademarks : (*)

1) Atmospheric air that is compressed, is composed of the following gases.

Nitrogen:	78%
Oxygen:	21%
Argon:	0.9%

2) Compressed air is also synthetically produced by mixing 79% of nitrogen with 21% of oxygen.