



MATERIAL SAFETY DATA SHEET

PRODUCT NAME: AIR, COMPRESSED

1. Chemical Product and Company Identification

BOC Gases,
Division of
The BOC Group, Inc.
575 Mountain Avenue
Murray Hill, NJ 07974

BOC Gases
Division of
BOC Canada Limited
5975 Falbourne Street, Unit 2
Mississauga, Ontario L5R 3W6

TELEPHONE NUMBER: (908) 464-8100
24-HOUR EMERGENCY TELEPHONE NUMBER:
CHEMTREC (800) 424-9300

TELEPHONE NUMBER: (905) 501-1700
24-HOUR EMERGENCY TELEPHONE NUMBER:
(905) 501-0802
EMERGENCY RESPONSE PLAN NO: 20101

PRODUCT NAME: AIR, COMPRESSED or COMPRESSED OXYGEN AND NITROGEN MIXTURE
CHEMICAL NAME: Oxygen and Nitrogen Mixture
COMMON NAMES/SYNONYMS: Compressed Oxygen and Nitrogen Mixture
TDG (Canada) CLASSIFICATION: 2.2 (5.1)
WHMIS CLASSIFICATION: A, C

PREPARED BY: Loss Control (908)464-8100/(905)501-1700
PREPARATION DATE: 6/1/95
REVIEW DATES: 6/7/96

2. Composition, Information on Ingredients

INGREDIENT	% VOLUME	PEL-OSHA ¹	TLV-ACGIH ²	LD ₅₀ or LC ₅₀ Route/Species
Nitrogen FORMULA: N ₂ CAS: 7727-37-9 RTECS #: QW9700000	2.0 to 98.0	Simple Asphyxiant	Simple Asphyxiant	Not Available
Oxygen FORMULA: O ₂ CAS: 7782-44-7 RTECS #: RS2060000	2.0 to 98.0	Not Available	Not Available	Not Available

¹ As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)

² As stated in the ACGIH 1994-95 Threshold Limit Values for Chemical Substances and Physical Agents

3. Hazards Identification

EMERGENCY OVERVIEW
Mixtures with less than 19.5% oxygen act as an asphyxiant. Effects may include headaches, dizziness and loss of consciousness. High oxygen concentrations may promote combustion of flammable materials.

ROUTE OF ENTRY:

Skin Contact No	Skin Absorption No	Eye Contact No	Inhalation Yes	Ingestion No
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HEALTH EFFECTS:

Exposure Limits No	Irritant No	Sensitization No
Teratogen No	Reproductive Hazard No	Mutagen Yes
Synergistic Effects None Reported		

Carcinogenicity: -- NTP: No IARC: No OSHA: No

EYE EFFECTS:

None known.

SKIN EFFECTS:

None known.

INGESTION EFFECTS:

None known.

INHALATION EFFECTS:

Air is nontoxic and necessary to support life. Mixtures with less than 19.5% oxygen act as an asphyxiant. Effects may include headaches, dizziness and loss of consciousness.

Not to be used as breathing air!

NFPA HAZARD CODES

Health: 0
Flammability: 0
Reactivity: 0

HMIS HAZARD CODES

Health: 0
Flammability: 0
Reactivity: 0

RATINGS SYSTEM

0 = No Hazard
1 = Slight Hazard
2 = Moderate Hazard
3 = Serious Hazard
4 = Severe Hazard

4. First Aid Measures

EYES:

None required.

SKIN:

None required.

INGESTION:

None required.

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INHALATION:

Not to be used as breathing air!

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.

Victims should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated is most important. Unconscious persons should be moved to an uncontaminated area. If they are not breathing, administer artificial resuscitation. Further treatment should be symptomatic and supportive.

5. Fire Fighting Measures

Conditions of Flammability: Oxidizer		
Flash point: None	Method: Not Applicable	Autoignition Temperature: None
LEL(%): None	UEL(%): None	
Hazardous combustion products: None		
Sensitivity to mechanical shock: None		
Sensitivity to static discharge: None		

FIRE AND EXPLOSION HAZARDS:

High oxygen concentrations vigorously accelerate combustion.

EXTINGUISHING MEDIA:

Water spray to keep cylinders cool.

FIRE FIGHTING INSTRUCTIONS:

If possible, stop the flow of gas which is supporting the fire.

6. Accidental Release Measures

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or container valve, contact the appropriate emergency telephone number listed in Section 1 or call your closest BOC location.

7. Handling and Storage

Electrical classification:

Nonhazardous.

Dry air is noncorrosive and may be used with all materials of construction. Moisture causes metal oxides which are formed with air to be hydrated so that they include volume and lose their protective role (rust formation). Concentrations of SO₂, Cl₂, salt, etc. in the moisture enhances the rusting of metals in air.

Oxygen should not be used as a substitute for compressed air in pneumatic equipment since this type of tool generally contains flammable lubricants.

Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (<3000 psig) piping or systems. Do not heat cylinder by

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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 into the system.

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 130°F (54°C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders being stored for excessive periods of time. Post "NO SMOKING OR OPEN FLAMES" signs in the storage area or use area. There should be no sources of ignition in the storage or use area.

For additional storage recommendations, consult Compressed Gas Association Pamphlets P-1, G-7, and G-7.1.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

8. Exposure Controls, Personal Protection

EXPOSURE LIMITS¹:

INGREDIENT	% VOLUME	PEL-OSHA ²	TLV-ACGIH ³	LD ₅₀ or LC ₅₀ Route/Species
Nitrogen FORMULA: N ₂ CAS: 7727-37-9 RTECS #: QW9700000	2.0 to 98.0	Simple Asphyxiant	Simple Asphyxiant	Not Available
Oxygen FORMULA: O ₂ CAS: 7782-44-7 RTECS #: RS2060000	2.0 to 98.0	Not Available	Not Available	Not Available]

¹ Refer to individual state or provincial regulations, as applicable, for limits which may be more stringent than those listed here.

² As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)

³ As stated in the ACGIH 1994-1995 Threshold Limit Values for Chemical Substances and Physical Agents.

EYE/FACE PROTECTION:

Safety goggles or glasses.

SKIN PROTECTION:

Protective gloves made of any suitable material.

OTHER/GENERAL PROTECTION:

Safety shoes, safety shower.

9. Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Gas	
Vapor pressure	: Above critical temp.	psia
Vapor density at STP (Air = 1)	: 1.0	
Evaporation point	: Not Available	
Boiling point	: -317.8	°F
	: -194	°C
Freezing point	: Not Available	
	: Not Available	
pH	: Not Available	
Specific gravity	: Not Available	
Oil/water partition coefficient	: Not Available	
Solubility (H2O)	: Slightly soluble	
Odor threshold	: Not Applicable	
Odor and appearance	: Odorless; Colorless Gas	

10. Stability and Reactivity

STABILITY:

Stable

INCOMPATIBLE MATERIALS:

All flammable materials.

HAZARDOUS DECOMPOSITION PRODUCTS:

None

HAZARDOUS POLYMERIZATION:

Will not occur.

11. Toxicological Information

REPRODUCTIVE:

Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

MUTAGENIC:

Oxygen concentrations between 20 to 95% have produced genetic changes in mammalian cell assay test systems.

OTHER:

High pressure effects (greater than two atmospheres of oxygen) are on the central nervous system. Improper decompression results in the accumulation of nitrogen in the blood.

NOTE: Compressed air is not intended for breathing use, since its oxygen contents may be below that which supports life.

12. Ecological Information

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No data given.

13. Disposal Considerations

Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to BOC Gases or authorized distributor for proper disposal.

14. Transport Information *

Parameter	United States DOT	Canada TDG
PROPER SHIPPING NAME:	Air, Compressed Compressed gases, n.o.s. (Oxygen, Nitrogen)/ Compressed gases, oxidizing, n.o.s. (Oxygen, Nitrogen)	Air, Compressed Compressed gases, n.o.s. (Oxygen, Nitrogen)/ Compressed gases, oxidizing, n.o.s. (Oxygen, Nitrogen)
HAZARD CLASS:	2.2	2.2 (5.1)
DOT ID NUMBER:	UN 1002 UN 1956 UN 3156	UN 1002 UN 1956 UN 3156
SHIPPING LABEL:	NONFLAMMABLE GAS NONFLAMMABLE GAS NONFLAMMABLE GAS, OXIDIZER	NONFLAMMABLE GAS NONFLAMMABLE GAS NONFLAMMABLE GAS, OXIDIZER

* Transport information is dependent on oxygen concentration. At concentrations greater than 22.5% oxygen, this product is classified as Compressed gases, oxidizing, n.o.s. At oxygen concentrations less than or equal to 22.5%, this product is classified as compressed gases, n.o.s.

15. Regulatory Information

SARA TITLE III NOTIFICATIONS AND INFORMATION

SARA TITLE III - HAZARD CLASSES:

Sudden Release of Pressure Hazard

16. Other Information

Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with his/her (written) consent is a violation of transportation regulations.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).