

# MATERIAL SAFETY DATA SHEET



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MAJOR SUPPLIERS OF CRYOGENICS AND WELDING EQUIPMENT

MSDS # N0000502

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## SECTION 1. MATERIAL IDENTIFICATION

<u>Product Name</u>	CAS #	N/A	<u>NFPA CODE 704/ HMIS</u>	
Compressed Air			Health	0
			Fire	0
			Reactivity	0
<u>Trade Name And Synonym</u>	<u>DOT Identification No</u>		Special Hazard	NONE
Compressed Air; Air; Compressed Air, Breathing Quality	UN-1002			
<u>Chemical Name And Synonyms</u>		<u>DOT Hazard Class</u>		
Air, Compressed (D.O.T.)		Division 2.2		
<u>Formula</u>	<u>Chemical Family</u>	<u>Description</u>		
See "Special Notes" section	N/A	Compressed Air		

## SECTION 2. HEALTH HAZARD INFORMATION

### Time Weighted Average Exposure Limit

No TWA established (ACGIH 1995-1996). No PEL (8 Hr. TWA) listed by OSHA 1993.

### Symptoms Of Exposure

Air is nontoxic and necessary to support life. Inhalation of air in a high pressure environment such as underwater diving, caissons or hyperbaric chambers can result in symptoms similar to overexposure to pure oxygen. These include tingling of fingers and toes, abnormal sensations, impaired coordination and confusion. Decompression sickness, pains or "bends" are possible following rapid decompression.

### Toxicological Properties

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.

Air is not listed in the IARC, NTP or by OSHA as a carcinogen or potential carcinogen.

Persons in ill health, where such illness would be aggravated by exposure to high pressure air, should not be allowed to work with or handle this product.

### Recommended First Aid Treatment

Facilities or practices at which air is breathed in a high pressure environment should be prepared to deal with the illnesses associated with decompression (bends or caisson disease). Decompression equipment may be required.

## SECTION 3. PHYSICAL DATA

### Boiling Point

-317.8°F (-194.3°C)

### Vapor Pressure @ 70° F (21.1°C)

(21.1°C): Above the critical temp. of -221.1°F (-140.6°C)

### Solubility In Water

Very slightly

### Liquid Density at Boiling Point

54.56 lb/ft<sup>3</sup> (874 kg/m<sup>3</sup>)

### Gas Density at 70°F 1 ATM

.0749 lb/ft<sup>3</sup> (1.200 kg/m<sup>3</sup>)

### Freezing Point

N/A (Gas Mixture)

Evaporation Rate

N/A (Gas)

Specific Gravity (AIR = 1)

@ 70°F (21.1°C) = 1.0

Appearance And Odor

Colorless, odorless gas

**SECTION 4. FIRE AND EXPLOSION HAZARD DATA**Flash Point

N/A

Auto Ignition Temperature

N/A

Flammable Units Percent by Volume

LEL N/A

UEL N/A

Extinguishing Media

Nonflammable gas

Electrical Classification

Nonhazardous

Special Firefighting Procedure

If cylinders are involved in a fire, safely relocate or keep cool with water spray.

Unusual Fire and Explosion Hazards

Compressed air at high pressures will accelerate the burning of materials to a greater rate than they burn at atmospheric pressure.

Hazardous Mixtures Of Other Liquids,Solids or Gases

N/A

**SECTION 5. REACTIVITY DATA**Stability Unstable StableConditions To Avoid

None

Hazardous Polymerization May Occur Will Not OccurConditions To Avoid

None

Incompatibility; (Materials to Avoid)

None

Hazardous Decomposition Products

None

**SECTION 6. SPILL, LEAK AND DISPOSAL PROCEDURES**Steps to be taken in Case Material is Released or Spilled

N/A

Waste Disposal

N/A

**SECTION 7. SPECIAL PROTECTION INFORMATION**Respiratory Protection

N/A

Ventilation

N/A

Local Exhaust

N/A

Special

N/A

Mechanical

N/A

Other

N/A

Protective Gloves

Any material

Eye Protection

Safety goggles or glasses

Other Protective Equipment

Safety shoes

**SECTION 8. SPECIAL PRECAUTIONS AND COMMENTS**Special Labeling Information

DOT Shipping Name: Air, Compressed

DOT Shipping Label: Nonflammable Gas

DOT Hazard Class: Division 2.2

I.D. No.: UN 1002

### Special Handling Recommendations

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 (<3,000 psig) 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 into the cylinder.

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

### Special Storage Recommendations

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 125°F (52 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 from being stored for excessive periods of time.

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

### Special Packaging Recommendations

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 increase in volume and lose their protective role (rust formation). Concentrations of SO<sub>2</sub>, Cl<sub>2</sub>, salt, etc. in the moisture enhances the rusting of metals in air.

### Other Recommendations or Precautions

Compressed gas cylinders should not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with his (written) consent is a violation of Federal Law (49CFR).

### Special Notes

Reporting under SARA, Title III, Section 313 not required.

Formulas continued:

Atmospheric air which is compressed is composed of the following concentrations of gases:

GAS	MOLAR %
Nitrogen	78.09
Oxygen	20.94
Argon	0.93
Carbon Dioxide	0.033*

Neon	18.18 x 10 <sup>-4</sup>
Helium	5.239 x 10 <sup>-4</sup>
Krypton	1.139 x 10 <sup>-4</sup>
Hydrogen	0.5 x 10 <sup>-4</sup>
Xenon	0.086 x 10 <sup>-4</sup>
Radon	6 x 10 <sup>-18</sup>
Water vapor	Varying concentrations

\* Concentrations may have slight variations.

Compressed air is also produced by reconstitution using only oxygen and nitrogen. This product contains 79 Molar percent nitrogen and 21 Molar percent oxygen, plus trace amounts of other atmospheric gases which are present in the oxygen and nitrogen.