



Emergency Contact: Chemtrec (800) 424-9300
Or Norco (208) 336-1643

1125 West Amity Road
Boise, ID 83705
(208) 336-1643

ZERO AIR

MATERIAL SAFETY DATA SHEET

Identification

Product Name: Zero Air
CAS Number: N/A
Chemical Family: Gas Mixture
Chemical Formula: 20.9% O₂ in N₂
Synonyms: Oxygen in Nitrogen, Zero Gas, oxygen Cal Gas.
MSDS Identification Code/Number: 2550
Prepared By: Quality Dept.

Revision Date: 03/07/01
Last Review Date: 02/20/07

Composition, Information on Ingredients

Exposure Limits¹:

INGREDIENT	% VOLUME	PEL-OSHA ²	TLV-ACGIH ³	LD ₅₀ or LC ₅₀ Route/Species
Oxygen Formula: O ₂ CAS: 7782-44-7 RTECS#: RS2060000	20.9 %	Not Available	Not Available	Not Available
Nitrogen Formula: N ₂ CAS: 7727-37-9 RTECS#: QW9700000	79.1 %	None Established	Simple Asphyxiant	Not Available

¹ Refer to individual state or provincial regulations, as applicable, for limits that 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 2006 Threshold Limit Values for Chemical Substances and Physical Agents.

OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

Hazards Identification

Emergency Overview:

Colorless, odorless nonflammable compressed gas. This product contains sufficient oxygen to support combustion and respiration. Contents under pressure. Use and store below 125° F (52° C).

Route of Entry:

Skin Contact No	Skin Absorption No	Eye Contact No	Inhalation Yes	Ingestion No
--------------------	-----------------------	-------------------	-------------------	-----------------

Hazards Identification Continued

Health Effects:

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

Carcinogenicity: NTP: No IARC: No OSHA: No

Eye Effects:

Contact with rapidly expanding gas near the point of release may cause frostbite.

Skin Effects:

Contact with rapidly expanding gas near the point of release may cause frostbite with redness, skin color change to gray or white, and blistering.

Ingestion Effects:

Ingestion is unlikely. Product is a gas at room temperature.

Inhalation Effects:

None expected. This product contains sufficient oxygen to sustain life. This product is not intended for use as breathing air.

Medical Conditions Aggravated by Exposure:

None known.

NFPA Hazard Codes

Health: 0
Flammability: 0
Reactivity: 0

HMIS Hazard Codes

Health: 0
Flammability: 0
Physical Hazard: 3

Ratings System

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

Hazard ratings were assigned in accordance with Compressed Gas Association (CGA) guidelines as published in CGA Pamphlet P-19-2004, *CGA Recommended Hazard Ratings for Compressed Gases, 2nd Edition*.

First Aid Measures

Eye:

None required for gas. If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention.

Skin:

None required for gas. For frostbite, immerse skin in lukewarm water. DO NOT USE HOT WATER. Obtain medical attention.

Ingestion:

Not anticipated; product is a gas.

Inhalation:

None required.

Fire Fighting Measures

Conditions of Flammability: Not flammable		
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:

Nonflammable, non-combustible. Cylinders may vent rapidly or rupture violently from pressure when involved in a fire situation.

Extinguishing Media:

Use media suitable for surrounding combustible or flammable materials.

Fire Fighting Instructions:

Use water spray to cool surrounding containers. Continue to cool surrounding containers until well after flames are extinguished. Firefighters should wear a full-face piece, NIOSH/MSHA-approved self-contained breathing apparatus (SCBA) operated in positive pressure mode and full turnout gear.

Accidental Release Measures

No hazard expected. If a leak is in user’s equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is in container valve, contact the appropriate emergency telephone number listed in Section 1 or call your closest Norco/NorLab location.

Handling and Storage

Electrical classification:

Non-hazardous.

This gas mixture is non-corrosive and may be used with all common structural materials.

Use only in well-ventilated areas. Valve protection caps must remain in place on refillable cylinders unless cylinder 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 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.

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 125^o F. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Use a “first in-first out” inventory system to prevent full cylinders being stored for excessive periods of time.

For additional recommendations, consult Compressed Gas Association Pamphlets P-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.

Exposure Controls, Personal Protection

Engineering Controls:

General ventilation.

Eye/Face Protection:

Safety goggles or glasses as appropriate for the job.

Skin Protection:

Protective gloves as appropriate for the job.

Respiratory Protection:

None normally required. Use as appropriate for the job.

Other/General Protection:

Safety shoes, emergency eye wash station.

Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Gas	
Vapor pressure	: Not available	
Vapor density (Air = 1)	: 1.0	
Evaporation point	: Not available	
Boiling point	: -317.8	°F
	: -194	°C
Freezing point	: Not available	°F
	: Not available	°C
pH	: Not applicable	
Specific gravity	: Not available	
Oil/water partition coefficient	: Not available	
Solubility (H ₂ O)	: Slightly soluble	
Odor threshold	: Not applicable	
Odor and appearance	: Colorless, odorless gas	

Stability and Reactivity

Stability:

Stable

Incompatible Materials:

None

Hazardous Decomposition Products:

None

Hazardous Polymerization:

Will not occur.

Toxicological Information

Product is non-toxic.

Ecological Information

Product does not contain any Class I or Class II ozone depleting substances. Not toxic. Will not bioconcentrate.

Disposal Considerations

Do not attempt to dispose of waste or unused quantities in returnable cylinders. Return in the shipping container, *properly labeled, with any valve outlet plugs or caps secure and valve protection cap in place* to NorLab for proper disposal. Non-refillable containers should be vented in a well-ventilated area then disposed of in compliance with local regulations, or returned to NorLab.

Transportation Information

Parameter	United States DOT	Canada TDG
Proper Shipping Name:	Air, Compressed	Air, Compressed
Hazard Class:	2.2	2.2
Identification Number:	UN 1002	UN 1002
Shipping Label:	Non Flammable Gas	Non Flammable Gas

Regulatory Information

SARA Title III Notifications and Information:

SARA Title III – Section 313 Supplier Notification:

This product does not contain toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and 40 CFR 372.

SARA Title III – Hazard Classes:

Sudden Release of Pressure Hazard

California Proposition 65: This product does not contain ingredient(s) known to the State of California to cause cancer or reproductive toxicity.

Other Information

Compressed gas cylinders must 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).