



COMPRESSED AIR, SYNTHETIC AIR

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	COMPRESSED AIR, SYNTHETIC AIR
Product Code(s)	G-113
UN-No	UN1002
Recommended Use	Compressed gas.
Synonyms	COMPRESSED OXYGEN AND NITROGEN MIXTURE; synthetic air; reconstituted air; medical air; medical air USP
Supplier Address	<p>Linde LLC 575 Mountain Ave. Murray Hill, NJ 07974 Phone: 908-464-8100 www.lindeus.com</p> <p>Linde Gas Puerto Rico, Inc. Las Palmas Village Road No. 869, Street No. 7 Catano, Puerto Rico 00962 Phone: 787-641-7445 www.pr.lindegas.com</p> <p>Linde Canada Limited 5860 Chedworth Way Mississauga, Ontario L5R 0A2 Phone: 905-501-1700 www.lindecana.com</p> <p>For additional product information contact your local customer service.</p>
Chemical Emergency Phone Number	Chemtrec: 1-800-424-9300 for US/ 703-527-3887 outside US

2. HAZARDS IDENTIFICATION

WARNING!		
Emergency Overview		
Contents under pressure Keep at temperatures below 52°C / 125°F		
Appearance Colorless	Physical State Compressed gas.	Odor Odorless

OSHA Regulatory Status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
<u>Potential Health Effects</u>	
Principle Routes of Exposure	Inhalation.

Acute Toxicity	
Inhalation	None known.
Eyes	None known. Contact with rapidly expanding gas near the point of release may cause frostbite.
Skin	None known. Contact with rapidly expanding gas near the point of release may cause frostbite.
Skin Absorption Hazard	No known hazard in contact with skin.
Ingestion	Not an expected route of exposure.
Chronic Effects	None known.
Aggravated Medical Conditions	None known.
Environmental Hazard	See Section 12 for additional Ecological Information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Volume %	Chemical Formula
Nitrogen	7727-37-9	76.5-80.5	N ₂
Oxygen	7782-44-7	19.5-23.5	O ₂

4. FIRST AID MEASURES

Eye Contact	None required for gas. If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention.
Skin Contact	None required for gas. For dermal contact or suspected frostbite, remove contaminated clothing and flush affected areas with lukewarm water. DO NOT USE HOT WATER. A physician should see the patient promptly if contact with the product has resulted in blistering of the dermal surface or in deep tissue freezing.
Inhalation	None under normal use.
Ingestion	None under normal use.
Notes to Physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable Properties	Substance does not burn but will support combustion. Containers may explode when heated.
Suitable Extinguishing Media	Dry chemical or CO ₂ . Water spray, fog or regular foam. DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.
Hazardous Combustion Products	Nitrogen oxides (NO _x).
<u>Explosion Data</u>	
Sensitivity to Mechanical Impact	None
Sensitivity to Static Discharge	None

Specific Hazards Arising from the Chemical	Continue to cool fire exposed cylinders until flames are extinguished. Cylinders may rupture under extreme heat. Damaged cylinders should be handled only by specialists.
Protective Equipment and Precautions for Firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	None required.
Environmental Precautions	No special environmental precautions required.
Methods for Containment	Stop the flow of gas or remove cylinder to outdoor location if this can be done without risk. If leak is in container or container valve, contact the appropriate emergency telephone number in Section 1 or call your closest Linde location.
Methods for Cleaning Up	Return cylinder to Linde or an authorized distributor.

7. HANDLING AND STORAGE

Handling	<p>This gas mixture is non-corrosive and may be used with all common structural materials.</p> <p>Use only in ventilated areas. Never attempt to lift a cylinder by its valve protection cap. Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distance, use a cart designed to transport cylinders. Use equipment rated for cylinder pressure. Use backflow preventive device in piping. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing leak to occur.</p> <p>Use an adjustable strap wrench to remove over-tight or rusted caps. Close valve after each use and when empty. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Never attempt to refill a compressed gas cylinder without the owner's written consent. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit.</p>
Storage	Protect from physical damage. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Store in cool, dry, well-ventilated area of non-combustible construction away from heavily trafficked areas and emergency exits. Keep at temperatures below 52°C / 125°F. 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. Always store and handle compressed gas cylinders in accordance with Compressed Gas Association, pamphlet CGA-P1, Safe Handling of Compressed Gases in Containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines	This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
Engineering Measures	None under normal use conditions.
Ventilation	Ensure adequate ventilation
<u>Personal Protective Equipment</u>	
Eye/Face Protection	Wear protective eyewear (safety glasses).
Skin and Body Protection	Work gloves and safety shoes are recommended when handling cylinders.

Respiratory Protection

General Use	No special protective equipment required.
Emergency Use	No special protective equipment required.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Product Information

Appearance	Colorless.	Odor	Odorless.
Odor Threshold	No information available.	Physical State	Compressed gas
Flash Point	No information available.	Autoignition Temperature	No information available
Flammability Limits in Air			
Upper	Not applicable		
Lower	Not applicable		

The following information is for the non inert components of this mixture:

Chemical Name	Boiling Point	Melting Point	Molecular Weight	Evaporation Rate	Water Solubility	Vapor Pressure	Vapor Density (Air=1)	Gas Density Kg/m ³ @20°C
Oxygen	-183 °C	-219 °C	31.99	-	Slightly soluble	Above critical temperature	1.11	1.331

The following information is for the INERT components that may be part of this mixture:

Chemical Name	Boiling Point	Melting Point	Molecular Weight	Evaporation Rate	Water Solubility	Vapor Pressure	Vapor Density (Air=1)	Gas Density Kg/m ³ @20°C
Nitrogen	-196 °C	-210 °C	28.01	-	0.023 (vol/vol @ 20°C and 1 atm)	Above critical temperature	0.97	1.165

10. STABILITY AND REACTIVITY

Stability	Stable.
Incompatible Products	None known.
Conditions to Avoid	None known.
Hazardous Decomposition Products	None known.
Hazardous Polymerization	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATIONAcute Toxicity

Product Information

LD50 Oral:	No information available.
-------------------	---------------------------

LD50 Dermal:	No information available.
LC50 Inhalation:	Refer to CGA P-20 for classification procedures for toxic gas mixtures.
Repeated Dose Toxicity	No information available.
Component Information	No information available.
<u>Chronic Toxicity</u>	
Chronic Toxicity	None known.
Carcinogenicity	Contains no ingredient listed as a carcinogen.
Irritation	No information available.
Sensitization	No information available.
Reproductive Toxicity	No information available.
Developmental Toxicity	No information available.
Synergistic Materials	None known.
Target Organ Effects	None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

Ozone depletion potential; ODP; (R-11 = 1): Does not contain ozone depleting chemical (40 CFR Part 82).

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	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 Linde for proper disposal.
------------------------	---

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name	Air, compressed
Hazard Class	2.2
Subsidiary Class	None

UN-No	UN1002
Description	UN1002,Air, compressed,2.2
<u>TDG</u>	
Proper Shipping Name	Air, compressed
Hazard Class	2.2
UN-No	UN1002
Description	UN1002,AIR, COMPRESSED,2.2

MEX

Proper Shipping Name	Air, compressed
Hazard Class	2.2
UN-No	UN1002
Description	UN1002 Air, compressed,2.2

IATA

UN-No	UN1002
Proper Shipping Name	Air, compressed
Hazard Class	2.2
ERG Code	2L
Description	UN1002,Air, compressed,2.2
Maximum Quantity for Passenger	75 kg
Maximum Quantity for Cargo Only	150 kg
Limited Quantity	No information available.

IMDG/IMO

Proper Shipping Name	Air, compressed
Hazard Class	2.2
UN-No	UN1002
EmS No.	F-C, S-V
Description	UN1002, Air, compressed,2.2

ADR

Proper Shipping Name	Air, compressed
Hazard Class	2.2
UN-No	UN1002
Classification Code	1A
Description	UN1002 Air, compressed,2.2,

15. REGULATORY INFORMATIONInternational Inventories

TSCA	Complies
DSL	Complies
EINECS/ELINCS	Complies

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
 EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	Yes
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Risk and Process Safety Management Programs

This material, as supplied, does not contain any regulated substances with specified thresholds under 40 CFR Part 68. This product does not contain any substances regulated as Highly Hazardous Chemicals pursuant to the 29 CFR Part 1910.110.

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

CERCLA/SARA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Oxygen	X	X	X	-	X
Nitrogen	X	X	X	-	X

International Regulations**Canada**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

A Compressed gases



16. OTHER INFORMATION

Prepared By Product Stewardship
 23 British American Blvd.
 Latham, NY 12110
 1-800-572-6501

Issuing Date 16-Jun-2010

Revision Date

Revision Number 0

Revision Note Initial Release.

<u>NFPA</u>	Health Hazard 0	Flammability 0	Stability 0	Physical and Chemical Hazards -
<u>HMIS</u>	Health Hazard 0	Flammability 0	Physical Hazard 3	Personal Protection -

Note: Ratings were assigned in accordance with Compressed Gas Association (CGA) guidelines as published in CGA Pamphlet P-19-2009, CGA Recommended Hazard Ratings for Compressed Gases, 3rd Edition.

General Disclaimer

For terms and conditions, including limitation of liability, please refer to the purchase agreement in effect between Linde LLC, Linde Merchant Production, Inc. or Linde Gas North America LLC (or any of their affiliates and subsidiaries) and the purchaser.

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).

End of Safety Data Sheet