

Praxair Material Safety Data Sheet

1. Chemical Product and Company Identification

Product Name: Air/Carbon Monoxide Mixture	Trade Name: Air/Carbon Monoxide Mixture
Product Use: Many.	
Chemical Name: Not available.	Synonym: Not applicable.
Chemical Formula: Not available.	Chemical Family: Not applicable.
Telephone: Emergencies: * 1-800-363-0042	Supplier /Manufacture: Praxair Canada Inc. 1 City Centre Drive Suite 1200 Mississauga, ON L5B 1M2
	Phone: 905-803-1600
	Fax: 905-803-1682

**Call emergency numbers 24 hours a day only for spills, leaks, fire, exposure, or accidents involving this product. For routine information, contact your supplier or Praxair sales representative.*

2. Composition and Information on Ingredients

INGREDIENTS	% (VOL)	CAS NUMBER	LD ₅₀ (Species & Routes)	LC ₅₀ (Rat, 4 hrs.)	TLV-TWA (ACGIH)
Air	99.0001-99.9999%	132259-10-0	Not available.	Not available	None
Carbon monoxide	.0001-0.9999%	630-08-0	Not available.	1807 ppm	25 ppm

3. Hazards Identification

Emergency Overview

WARNING! High pressure gas. May be harmful if inhaled. May cause dizziness and drowsiness. Self-contained breathing apparatus may be required by rescue workers.

ROUTES OF EXPOSURE: Inhalation.

THRESHOLD LIMIT VALUE: TLV-TWA Data from 2010 Guide to Occupational Exposure Values (ACGIH). TLV-TWAs should be used as a guide in the control of health hazards and not as fine lines between safe and dangerous concentrations.

EFFECTS OF A SINGLE (ACUTE) OVEREXPOSURE:

INHALATION: Asphyxiant. Effects are due to lack of oxygen. Moderate concentrations may cause headaches, drowsiness, dizziness, excitation, excess salivation, vomiting, and unconsciousness. Lack of oxygen can kill.

SKIN CONTACT: No harm expected.

SKIN ABSORPTION: No harm expected.

SWALLOWING:

This product is a gas at normal temperature and pressure.

EYE CONTACT:

No harm expected.

EFFECTS OF REPEATED (CHRONIC) OVEREXPOSURE:

None known.

OTHER EFFECTS OF OVEREXPOSURE:

None known.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:

Repeated or prolonged exposure is not known to aggravate medical condition.

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION:

Not available - mixture not tested.

CARCINOGENICITY:

Not listed as carcinogen by OSHA, NTP or IARC.

4. First Aid Measures

INHALATION:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, qualified personnel may give oxygen. Call a physician.

SKIN CONTACT:

Wash with soap and water.

SWALLOWING:

This product is a gas at normal temperature and pressure.

EYE CONTACT:

Flush with water. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Get medical attention if discomfort persists.

NOTES TO PHYSICIAN:

There is no specific antidote. Treatment of over-exposure should be directed at the control of symptoms and the clinical condition. With severe cases, the use of hyperbaric oxygen may be beneficial.

5. Fire Fighting Measures

FLAMMABLE :	No.	IF YES, UNDER WHAT CONDITIONS?	Not applicable.
FLASH POINT (test method)	Not applicable.	AUTOIGNITION TEMPERATURE	Not applicable
FLAMMABLE LIMITS IN AIR, % by volume:	LOWER: Not applicable.	UPPER:	Not applicable.

EXTINGUISHING MEDIA:

This mixture cannot catch fire. Use media appropriate for surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES:

WARNING High pressure gas. May be harmful if inhaled. Evacuate all personnel from danger area. Immediately deluge cylinders with water from maximum distance until cool; then move them away from fire area if without risk. Self-contained breathing apparatus may be required by rescue workers. On-site fire brigades must comply with OSHA 29 CFR 1910.156.

UNUSUAL FIRE AND EXPLOSION HAZARD:

Heat of fire can build pressure in cylinder and cause it to rupture. No part of cylinder should be subjected to a temperature higher than 52 C. Cylinders containing this mixture are equipped with a pressure relief device. (Exceptions may exist where authorized by TDG Regulations.)

HAZARDOUS COMBUSTION PRODUCTS:

These products are carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂...).

SENSITIVITY TO IMPACT:

Avoid impact against container.

SENSITIVITY TO STATIC DISCHARGE:

Not applicable.

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

WARNING! High pressure gas. May be harmful if inhaled. Evacuate all personnel from danger area. Use self-contained breathing apparatus where needed. Shut off flow if you can do so without risk. Ventilate area or move cylinder to a well-ventilated area. Test for sufficient oxygen, especially in confined spaces, before allowing reentry.

WASTE DISPOSAL METHOD:

Prevent waste from contaminating the surrounding environment. Keep personnel away. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner, in full compliance with Federal, Provincial, and local regulations. If necessary, call your local supplier for assistance.

7. Handling and Storage

PRECAUTIONS TO BE TAKEN IN STORAGE:

Store and use with adequate ventilation. Firmly secure cylinders upright to keep them from falling or being knocked over. Screw valve protection cap firmly in place by hand. Store only where temperature will not exceed 52 C. Store full and empty cylinders separately. Use a first-in, first-out inventory system to prevent storing full cylinders for long periods.

PRECAUTIONS TO BE TAKEN IN HANDLING:

Protect cylinders from damage. Use a suitable hand truck to move cylinders; do not drag, roll, slide, or drop. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Open valve slowly. If valve is hard to open, discontinue use and contact your supplier.

For additional information on storage and handling, refer to Compressed Gas Association (CGA) pamphlet P-1, *Safe Handling of Compressed Gases in Containers*, available from the CGA. Refer to Section 16 for the address and phone number along with a list of other available publications.

OTHER HAZARDOUS CONDITIONS OF HANDLING, STORAGE, AND USE:

High pressure gas. Use piping and equipment adequately designed to withstand pressures to be encountered. **May be harmful if inhaled.** Store and use with adequate ventilation. Close valve after each use; keep closed even when empty. **Prevent reverse flow.** Reverse flow into cylinder may cause rupture. Use a check valve or other protective device in any line or piping from the cylinder. **Never work on a pressurized system.** If there is a leak, close the cylinder valve. Blow the system down in an environmentally safe manner in compliance with all federal, provincial, and local laws, then repair the leak. **Never place a compressed gas cylinder where it may become part of an electrical circuit.**

8. Exposure Controls/Personal Protection

VENTILATION/ENGINEERING CONTROLS:

LOCAL EXHAUST: Use an explosion-proof local exhaust system, if necessary, to prevent oxygen deficiency and keep hazardous fumes and gases below applicable TLVs in the worker's breathing zone.

MECHANICAL (general): General exhaust ventilation may be acceptable if it can maintain an adequate supply of air.

SPECIAL: None.

OTHER: None.

PERSONAL PROTECTION:

RESPIRATORY PROTECTION: Wear appropriate respirator when ventilation is inadequate.

Select in accordance with provincial regulations, local bylaws or guidelines. Selection should also be based on the current CSA standard Z94.4, "Selection, Care and Use of Respirators". Respirators should also be approved by NIOSH and MSHA.

SKIN PROTECTION: Wear work gloves when handling cylinders.

EYE PROTECTION: Wear safety glasses when handling cylinders.

Select in accordance with the current CSA standard Z94.3, "Industrial Eye and Face Protection", and any provincial regulations, local bylaws or guidelines.

OTHER PROTECTIVE EQUIPMENT: Metatarsal shoes for cylinder handling. Protective clothing where needed. Cuffless trousers should be worn outside the shoes. Select in accordance with the current CSA standard Z195, "Protective Foot Wear", and any provincial regulations, local bylaws or guidelines.

9. Physical and Chemical Properties

PHYSICAL STATE: Gas.	FREEZING POINT: -216.2°C (-357.2°F) based on data for: Air.	pH: Not available.
BOILING POINT: Not available.	VAPOUR PRESSURE: Not applicable.	MOLECULAR WEIGHT: Not applicable.
SPECIFIC GRAVITY: LIQUID (Water = 1) The only known value is 1 (Water = 1) (Air).	SOLUBILITY IN WATER, Partially soluble in cold water.	
SPECIFIC GRAVITY: VAPOUR (air = 1) The only known value is 1 (Air). Vapour(Air=1)	EVAPORATION RATE (Butyl Acetate=1): >1 (Air) compared to (Butyl Acetate = 1)	COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable.
VAPOUR DENSITY: The highest known value is >1 (Air = 1) (Air).	% VOLATILES BY VOLUME: Not available.	ODOUR THRESHOLD: Not available.

APPEARANCE & ODOUR: Colourless gas at normal temperature and pressure. Odourless.

10. Stability and Reactivity

STABILITY:	The product is stable.
CONDITIONS OF CHEMICAL INSTABILITY:	See Section 7.
INCOMPATIBILITY (materials to avoid):	Flammable and combustible materials.
HAZARDOUS DECOMPOSITION PRODUCTS:	Not available - mixture not tested.
HAZARDOUS POLYMERIZATION:	Will not occur.
CONDITIONS OF REACTIVITY:	Not available - mixture not tested.

11. Toxicological Information

See section 3.

12. Ecological Information

No adverse ecological effects expected. This product does not contain any Class I or Class II ozone-depleting chemicals. The components of this mixture are not listed as marine pollutants by TDG Regulations.

13. Disposal Considerations

WASTE DISPOSAL METHOD: Do not attempt to dispose of residual or unused quantities. Return cylinder to supplier.

14. Transport Information

TDG/IMO SHIPPING NAME: COMPRESSED GAS, N.O.S. (Air)

HAZARD CLASS:	CLASS 2.2: Non-flammable, and non-toxic gas	IDENTIFICATION #:	UN1956	PRODUCT REPORTABLE QUANTITY (PRQ):	Any accidental release in a quantity that could pose a danger to public safety or any sustained release of 10 minutes or more
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SHIPPING LABEL(s): Non-flammable, non-toxic gas

PLACARD (when required): Non-flammable, non-toxic gas

SPECIAL SHIPPING INFORMATION:

Cylinders should be transported in a secure position, in a well-ventilated vehicle. Cylinders transported in an enclosed, non-ventilated compartment of a vehicle can present serious safety hazards.

15. Regulatory Information

The following selected regulatory requirements may apply to this product. Not all such requirements are identified. Users of this product are solely responsible for compliance with all applicable federal, provincial, and local regulations.

DSL (Canada)	This product is on the DSL list
WHMIS (Canada)	CLASS A: Compressed gas.
International Regulations	
EINECS	Not available.

Product Name: Air/Carbon Monoxide
Mixture

MSDS# E-6235-I

Date: Oct. 15, 2013

DSCL (EEC) This product is not classified according to the EU regulations.

International Lists No products were found.

16. Other Information

MIXTURES:

When two or more gases, or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. 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.

HAZARD RATING SYSTEM:

HMIS RATINGS:

HEALTH 0

FLAMMABILITY 0

PHYSICAL HAZARD 2

STANDARD VALVE CONNECTIONS FOR U.S. AND CANADA:

THREADED: CGA-590

PIN-INDEXED YOKE: Not available.

ULTRA-HIGH-INTEGRITY CONNECTION: Not available.

Use the proper CGA connections. **DO NOT USE ADAPTERS.** Additional limited-standard connections may apply. See CGA pamphlets V-1 and V-7 listed below.

Ask your supplier about free Praxair safety literature as referred to in this MSDS and on the label for this product. Further information about this product can be found in the following pamphlets published by the Compressed Gas Association, Inc. (CGA), 4221 Walney Road, 5th Floor, Chantilly, VA 20151-2923, Telephone (703) 788-2700, Fax (703) 961-1831, website: www.cganet.com.

- AV-1 Safe Handling and Storage of Compressed Gas
- P-1 Safe Handling of Compressed Gases in Containers
- V-1 Compressed Gas Cylinder Valve Inlet and Outlet Connections
- V-7 Standard Method of Determining Cylinder Valve Outlet Connections for Industrial Gas Mixtures
- Handbook of Compressed Gases, Fifth Edition

For more indepth information for each component, refer to the pure product MSDS.

The information contained in this MSDS is generated from technical sources using the Chemmate Mixture MSDS system and the pure-product MSDS for each component. These mixtures are not tested as a whole for chemical, physical, or health effects.

PREPARATION INFORMATION:

DATE: October 15, 2013

DEPARTMENT: Safety and Environmental Services

TELEPHONE: 905-803-1600

Product Name: Air/Carbon Monoxide
Mixture

MSDS# E-6235-H

Date: Oct. 15, 2013

The opinions expressed herein are those of qualified experts within Praxair Canada Inc. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the conditions of use of the product are not within the control of Praxair Canada Inc., it is the user's obligation to determine the conditions of safe use of the product.

Praxair Canada Inc. requests the users of this product to study this Material Data Sheet (MSDS) and become aware of product hazards and safety information. To promote safe use of this product, a user should (1) notify its employees, agents and contractors of the information on this MSDS and any product hazards and safety information, (2) furnish this same information to each of its customers for the product, and (3) request such customers to notify their employees and customers for the product of the same product hazards and safety information.

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