



Material Safety Data Sheet

Carbon Monoxide 50 ppm Cylinder

(REVISED 1/23/02)

EMERGENCY PHONE: (800) 424-9300

Section 1 - Identification

Product Code: 614-0050-85
Product Name: Cylinder, Carbon Monoxide 50 ppm, Balance Air
Synonyms: CO 50 ppm
Chemical Family: Gas Mixtures
CAS #: N/A
Molecular Formula: CO (50 ppm in Air)

NFPA Rating

Health	1
Flammability	0
Reactivity	0
Special	None

Section 2 - Ingredients

Chemical	CAS #	%	OSHA/PEL	ACGIH TLV
Carbon Monoxide	630-08-0	.0001 < x < 5	50 ppm TWA	25 ppm TWA
Air	N/A	95 < x < 99.9999	None	None

Section 3 - Physical Data

Boiling Point: N/A
% Volatiles: N/A
Solubility in Water: Slightly Soluble
Specific Gravity (H₂O = 1): N/A
Freezing / Melting Point: N/A
Evaporation Rate
(butyl acetate = 1): N/A
Vapor Density (air = 1): N/A
Vapor Pressure: N/A
Appearance and Odor: Odorless, colorless gas
Other:

Section 4 - Fire and Explosion Hazard Data

Flash Point (°F):	N/A
Flammable Limits in Air, % by volume:	Lower: 12.5% CO Upper: 74.0% CO
Autoignition Temperature:	N/A
Extinguishing Media:	N/A
Special Fire Fighting Procedures:	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Stop flow of gas supply if possible. Use water spray to cool surrounding containers until well after flames are extinguished. Cylinders may rupture violently when involved in a fire situation.
NFPA Ratings (Scale 0-4):	Health = 1, Fire = 0, Reactivity = 0

Section 5 - Health Data

OSHA (PEL): CO 50 ppm TWA
 Air None

ACGIH (TLV): CO 25 ppm TWA
 Air None

ANIMAL TOXICITY

LDLO unr-man: N/A
 LD50: Oral - rat N/A
 Skin - rabbit N/A
 Carcinogenicity: No

EFFECTS OF EXPOSURE

Acute Effects

Ingestion: N/A
 Skin Contact: None.
 Eye Contact: None.
 Inhalation: Inhaled carbon monoxide can reduce the blood's ability to transport oxygen. Depending on exposure, inhalation can cause headache, dizziness, heart palpitations, weakness, confusion, nausea, convulsions, unconsciousness, and death.

Medical Conditions, if any, aggravated by the chemical: None identified.

Other health hazards: Inhalation of carbon monoxide by pregnant test animals has produced cardiovascular and behavioral defects in offspring.

Most likely routes of entry: Inhalation, skin contact.

Chronic Effects

Ingestion: N/A
 Skin Contact: None.
 Eye Contact: None.
 Inhalation: None.
 Other: N/A



Section 5 - Health Data (continued)

EMERGENCY AND FIRST AID PROCEDURES

Ingestion: None Required.
Skin Contact: None Required.
Eye Contact: Remove victim to fresh air. Flush eyes with water for 15 minutes. If pain is present, seek medical attention.
Inhalation: Immediate medical attention is required for all cases of overexposure to carbon monoxide. Rescue personnel should be equipped with self-contained breathing apparatus. Victims should be removed to fresh air and be treated with supplemental oxygen. Quick removal from the contaminated area is most important. The administration of oxygen at an elevated pressure (up to 2 to 2.5 atmospheres) has shown to be beneficial as has treatment in a hyperbaric chamber. The attending physician should be informed that the victim has inhaled toxic quantities of carbon monoxide.

Section 6 - Reactivity

Incompatibility: None.
Hazardous
Decomposition Products: None.
Stability: Stable.
Hazardous Polymerization: Will not occur.
Other: None

Section 7 - Environmental Information

RCRA Code: N/A
TSCA Registered: No
Spill and Leak Procedures: Remove all personnel from affected areas. Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. 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 valve, contact the appropriate emergency telephone number listed on front page of this MSDS.
Waste Disposal: Dispose in accordance with all applicable federal, state, and local environmental regulations.



Section 8 - Protection Information

Ventilation Requirement: Use hood with forced ventilation system. Use local exhaust to prevent accumulation above the exposure limit. Use mechanical ventilation in accordance with electrical codes.

Respiratory Protection: Positive pressure air line with mask and escape bottle or self-contained breathing apparatus should be available for emergency use.

Protective Gloves: Gloves made of suitable material.

Eye/Face Protection: Safety goggles.

Section 9 - Special Precautions

Handling and Storage: Use only in well ventilated areas. Do not drag, slide or roll cylinders. Always use a suitable hand truck for moving cylinders. Use a pressure reducing regulator to connect high pressure cylinders with low pressure systems. Store in cool, dry, well ventilated areas. Carbon monoxide can be used in all commonly used metals up to approximately 500 psig. Above that pressure it forms toxic and corrosive carbonyl compounds with some metals. Verify appropriateness of cylinder material before transferring carbon monoxide for high pressure applications.

Other Precautions: Do not heat cylinder by any means. Cylinder temperature should never exceed 125 F. Store cylinders upright and firmly secured to prevent falling or being knocked over. Protect cylinders from physical damage.

Section 10 - Transportation Information - U.S. Department of Transportation

Proper Shipping Name: Compressed gases, n.o.s.. (Carbon Monoxide, Air).

Hazardous Class: 2.2.

UN#: 1956.

Shipping label: Non Flammable Gas

Reportable Quantity: 5,000 lbs.

Section 11 - Comments

This data is offered in good faith as typical values and not as a product specification. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.