

Material Safety Data Sheet

Printing date 04/16/2007

Version 1

Reviewed on 04/16/2007

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1 Identification of substance

- **Product details**
- **Trade name:** Carbon Monoxide
- **Article number:** 013-01-0010BOC
- **Creation date:** 08/03/2006
- **Manufacturer/Supplier:**
 BOC Canada Limited
 5860 Chedworth Way
 Mississauga, Ontario L5R 0A2
 www.bocgases.ca

TELEPHONE NUMBER: (905) 501-1700
 24-HOUR EMERGENCY TELEPHONE NUMBER: (905) 501-0802
 EMERGENCY RESPONSE PLAN NO: 2-0101

Please ensure that this MSDS is received by the appropriate person

- **Information department:** Customer Service Centre: 1-866-385-5349

2 Composition/Data on components

- **Chemical characterization:**
- **CAS No. Description**
630-08-0 Carbon Monoxide
- **Identification number(s)**
- **EINECS Number:** 211-128-3
- **EU Number:** 006-001-00-2

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3 Hazards identification

- **Hazard description:**
Repr. Cat. 1
- **WHMIS-symbols:**
 A - Compressed gas
 B1 - Flammable gas
 D1A - Very toxic material causing immediate and serious toxic effects



- **HMIS-ratings (scale 0 - 4)**

HEALTH	4	Health = 4
FIRE	4	Fire = 4
REACTIVITY	0	Reactivity = 0

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· NFPA ratings (scale 0 - 4)

Health = 4
Fire = 4
Reactivity = 0

· Information pertaining to particular dangers for man and environment:

Flammable.

· Classification system:

The classification is in line with internationally approved calculation standards. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

4 First aid measures

- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Not applicable

5 Fire fighting measures

- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Protective equipment:** Wear self-contained respiratory protective device.

6 Accidental release measures

- **Person-related safety precautions:**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation.
- **Measures for environmental protection:** Prevent seepage into sewage system, workpits and/or cellars.
- **Measures for cleaning/collecting:** Ensure adequate ventilation.

7 Handling and storage

- **Handling:**
- **Information for safe handling:** Open and handle cylinder with care.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Keep respiratory protective device available.
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Do not expose cylinder to temperatures higher than 50°C (122 °F)

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- **Information about storage in one common storage facility:**
Store separately from strong oxidizing agents and halogen compounds.
- **Further information about storage conditions:**
Keep cylinder valve tightly closed.
Store cylinder in a well ventilated area.
Store in accordance with local fire code and/or building code or any pertaining regulations.

8 Exposure controls and personal protection

- **Additional information about design of technical systems:** Adequate local ventilation.

- **Components with limit values that require monitoring at the workplace:**

630-08-0 Carbon Monoxide (23-100%)

EL	Short-term value: 100 ppm
	Long-term value: 25 ppm
R	

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Wash hands before breaks and at the end of work.
Store protective clothing separately.
- **Breathing equipment:**
Use atmosphere-supplying respirators (e.g. supplied-air: demand, pressure-demand, or continuous-flow or self-contained breathing apparatus: demand or pressure-demand or combination supplied-air with auxiliary self-contained air supply atmosphere-supplying respirator) in case of insufficient ventilation.
- **Protection of hands:**



Protective gloves.

- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Eye protection:** Safety glasses

9 Physical and chemical properties

- **General Information**

Form:	Gaseous.
Color:	Colorless
Odor:	Odorless

- **Change in condition**
Melting point/Melting range: -205.1°C
Boiling point/Boiling range: -191°C

- **Flash point:** Not applicable.

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- **Flammability (solid, gaseous):** Flammable.
- **Ignition temperature:** 605°C
- **Danger of explosion:** Formation of explosive air/vapor mixtures are possible.
- **Explosion limits:**
 - Lower:** 12.5 Vol %
 - Upper:** 74 Vol %
- **Solubility in / Miscibility with Water at 20°C:** 0.028 g/l

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Materials to be avoided:**
 - Heat.
 - Strong oxidizing agents.
 - Halogen compounds.
- **Dangerous reactions**
 - Heat will cause container to explode.
 - Contact with strong oxidizing agents or halogen compounds will cause a violent reaction.
- **Dangerous products of decomposition:** No dangerous decomposition products known.

11 Toxicological information

- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

630-08-0 Carbon Monoxide

Inhalative LC50/4hr 1807 mg/l (rat)

- **Primary irritant effect:**
 - **on the skin:** No irritating effect.
 - **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.

13 Disposal considerations

- **Product:**
- **Recommendation:**
 - Cylinder and unused product should be returned to vendor. Disposable cylinder must be disposed of in accordance with local regulations.
- **Uncleaned packagings:**
- **Recommendation:**
 - Cylinder and unused product should be returned to vendor. Disposable cylinder must be disposed of in accordance with local regulations.

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· **Recommended cleansing agent:** None applicable.

14 Transport information

· TDG and DOT regulations:



- **Hazard class:** 2
- **Identification number:** UN1016
- **Packing group:** -
- **Proper shipping name (technical name):** MONOXYDE DE CARBONE COMPRIMÉ
- **Label:** 2.3+2.1
- **Packaging group:** -

· Maritime transport IMDG:



- **IMDG Class:** 2.3
- **UN Number:** 1016
- **Label:** 2.3+2.1
- **Packaging group:** -
- **EMS Number:** F-D,S-U
- **Marine pollutant:** No
- **Propper shipping name:** CARBON MONOXIDE, COMPRESSED

· Air transport ICAO-TI and IATA-DGR:



- **ICAO/IATA Class:** 2
- **UN/ID Number:** 1016
- **Label:** 2.3+2.1
- **Packaging group:** -
- **Propper shipping name:** CARBON MONOXIDE, COMPRESSED

15 Regulations

· **Sara**

· **Section 355 (extremely hazardous substances):**

Substance is not listed.

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· Section 313 (Specific toxic chemical listings):

Substance is not listed.

· TSCA (Toxic Substances Control Act):

Substance is listed.

· Proposition 65**· Chemicals known to cause cancer:**

Substance is not listed.

· Chemicals known to cause reproductive toxicity for females:

Substance is not listed.

· Chemicals known to cause reproductive toxicity for males:

Substance is not listed.

· Chemicals known to cause developmental toxicity:

Substance is listed.

· Cancerogenity categories**· EPA (Environmental Protection Agency)**

Substance is not listed.

· NTP (National Toxicology Program)

Substance is not listed.

· TLV (Threshold Limit Value established by ACGIH)

Substance is not listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

Substance is not listed.

· OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

· Canadian substance listings:**· Canadian Domestic Substances List (DSL)**

Substance is listed.

· Canadian Ingredient Disclosure list (limit 0.1%)

Substance is listed.

· Canadian Ingredient Disclosure list (limit 1%)

Substance is not listed.

· Product related hazard informations:

The product has been classified and marked in accordance with directives on hazardous materials.

· Hazard symbols:

Repr. Cat. 1

· Risk phrases:

Flammable.

· Safety phrases:

Keep away from sources of ignition - No smoking.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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Avoid exposure - obtain special instructions before use.

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16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing MSDS:** Customer Service Centre: 1-866-385-5349
- **Contact:** Canada Technical Services: 1-866-385-5349
- *** Data compared to the previous version altered.**

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