Material Safety Data Sheet

Printing date 04/26/2007 Version 2 Reviewed on 04/26/2007

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1 Identification of substance

· **Product details**

· **Trade name: Carbon Dioxide (Dry Ice)**

· **Article number:** 060-01-0001BOC

· **Creation date:** 04/20/2007

· **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**
124-38-9 Carbon Dioxide
· **Identification number(s)**
· **EINECS Number:** 204-696-9

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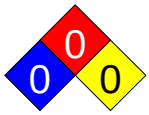
3 Hazards identification

· **Hazard description:** Refrigerated solid. May cause cold burns or frostbite.
· **WHMIS-symbols:**
A - Compressed gas

· **HMIS-ratings (scale 0 - 4)**

Health = 0
Fire = 0
Reactivity = 0

· **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 0

· **Information pertaining to particular dangers for man and environment:** Not applicable.

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· **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.

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4 First aid measures

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:**
May cause cold burn or frostbite. Place contacted area in warm water 37.8°C - 40.6°C (100°F - 105°F). Do not rub. Seek medical attention.
· **After eye contact:** Seek medical attention immediately. Apply a sterile pad over eye.
· **After swallowing:** Not applicable

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5 Fire fighting measures

· **Suitable extinguishing agents:**
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Protective equipment:** Wear self-contained respiratory protective device.

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6 Accidental release measures

· **Person-related safety precautions:**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventillation.
Stop leak - ONLY if possible to do so without risk.
· **Measures for environmental protection:** Prevent seepage into sewage system, workpits and/or cellars.
· **Measures for cleaning/collecting:** Ensure adequate ventillation.
· **Additional information:** No dangerous substances are released.

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7 Handling and storage

· **Handling:**
· **Information for safe handling:**
Handle with care. Avoid jolting, friction, and impact.
Use only in well ventilated areas.
Store cylinders upright with valve protection cap in place and firmly secured to prevent falling or being knocked over.
If difficulty with operating cylinder valve is experienced discontinue use and contact supplier.
· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
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)
· **Information about storage in one common storage facility:**
Sources of ignition should be removed from storage area.

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· **Further information about storage conditions:**
Keep cylinder valve tightly closed.
Protect from dust and insects.

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8 Exposure controls and personal protection

· **Additional information about design of technical systems:**
Adequate local ventillation.
Safety showers and eyewash stations should be nearby.

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

124-38-9 Carbon Dioxide (23-100%)

EL	Short-term value: 15000 ppm Long-term value: 5000 ppm

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Personal protective equipment:**
· **General protective and hygienic measures:**
Protective clothing should be kept free of oil and grease.
PPE should be inspected and maintained regularly to retain it's effectiveness.
· **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

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9 Physical and chemical properties

· **General Information**

Form:	Gaseous.
Color:	Colorless
Odor:	Odorless

· **Change in condition**

Melting point/Melting range:	-56.6°C
Boiling point/Boiling range:	-78°C

· **Flash point:**	Not applicable.
· **Flammability (solid, gaseous):**	Product is not flammable.

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· **Danger of explosion:**	Product does not present an explosion hazard.
· **Solubility in / Miscibility with Water at 20°C:**	2000 g/l

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Dangerous reactions** No dangerous reactions known.
· **Dangerous products of decomposition:** No dangerous decomposition products known.

11 Toxicological information

· **Acute toxicity:**
· **LD/LC50 values that are relevant for classification:** LC50 - None available.
· **Primary irritant effect:**
· **on the skin:** No irritating effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
The substance is not subject to classification.

12 Ecological information

· **General notes:** Generally not hazardous for water

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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:**
Disposal must be made according to official regulations.
Cylinder and unused product should be returned to vendor. Disposable cylinder must be disposed of in accordance with local regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

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14 Transport information

· **TDG and DOT regulations:**

· **Hazard class:**	1
· **Identification number:**	UN1845
· **Proper shipping name (technical name):**	CARBON DIOXIDE, SOLID
· **Label**	2.2

· **Maritime transport IMDG:**

· **IMDG Class:**	2
· **UN Number:**	1845
· **Label**	2.2
· **Marine pollutant:**	No
· **Propper shipping name:**	CARBON DIOXIDE, SOLID

· **Air transport ICAO-TI and IATA-DGR:**

· **ICAO/IATA Class:**	2
· **UN/ID Number:**	1845
· **Label**	2.2
· **Propper shipping name:**	CARBON DIOXIDE, SOLID

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15 Regulations

· **Sara**

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

Substance is not listed.

· **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.

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· **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity:**

Substance is not 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 not listed.

· **Canadian Ingredient Disclosure list (limit 1%)**

Substance is listed.

· **Product related hazard informations:**
Observe the general safety regulations when handling chemicals.
The substance is not subject to classification according to the sources of literature known to us.
The product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations.

· **Safety phrases:**
Keep container tightly closed in a cool place.

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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:**
BOC Canada Technical Services
Customer Service Centre: 1-866-385-5349

· **Contact:** Canada Technical Services: 1-866-385-5349