

Material Safety Data Sheet

Printing date 04/16/2007

Version 1

Reviewed on 04/16/2007

1 Identification of substance

· **Product details**

· **Trade name:** Chlorine

· **Article number:** 005-01-0009BOC

· **Creation date:** 08/15/2006

· **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**

7782-50-5 Chlorine

· **Identification number(s)**

· **EINECS Number:** 231-959-5

· **EU Number:** 017-001-00-7

3 Hazards identification

· **Hazard description:**



Toxic

Dangerous for the environment

· **WHMIS-symbols:**

A - Compressed gas

D1A - Very toxic material causing immediate and serious toxic effects

E - Corrosive material



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· HMIS-ratings (scale 0 - 4)

HEALTH	3	Health = 3
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

· NFPA ratings (scale 0 - 4)

3	0	0
Health = 3	Fire = 0	Reactivity = 0

· Information pertaining to particular dangers for man and environment:

Toxic by inhalation.

Irritating to eyes, respiratory system and skin.

Very toxic to aquatic organisms.

· 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**· General information:**

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· After inhalation:

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably on the body side position.

· After skin contact: Immediately wash with water and soap and rinse thoroughly.**· 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.**· 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:**

Dispose contaminated material as waste according to item 13.

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Ensure adequate ventilation.

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7 Handling and storage

- **Handling:**
- **Information for safe handling:**
 - Ensure good ventilation/exhaustion at the workplace.
 - Open and handle cylinder with care.
- **Information about protection against explosions and fires:**
 - Keep ignition sources away - Do not smoke.
 - 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)
- **Information about storage in one common storage facility:**
 - Not required.
 - Store away from flammable substances.
- **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:**

7782-50-5 Chlorine (23-100%)

EL	Short-term value: 1 ppm
	Long-term value: 0.5 ppm

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment:**
- **General protective and hygienic measures:**
 - Keep away from foodstuffs, beverages and feed.
 - Immediately remove all soiled and contaminated clothing.
 - Wash hands before breaks and at the end of work.
 - Store protective clothing separately.
 - Avoid contact with the eyes and skin.
- **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.

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· 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:	Light yellow
Odor:	Acrid

· Change in condition

Melting point/Melting range:	-101°C
Boiling point/Boiling range:	-34°C

· Flash point: Not applicable.

· Danger of explosion: Product does not present an explosion hazard.

· Solubility in / Miscibility with

Water at 20°C:	0.7 g/l
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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:** If burned toxic fumes of chlorides may be formed.

11 Toxicological information

· Acute toxicity:
· LD/LC50 values that are relevant for classification:
7782-50-5 Chlorine

Inhalative	LC50/4hr	293 mg/l (rat)
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· Primary irritant effect:

- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.

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12 Ecological information

- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish
- **General notes:**
 - Do not allow product to reach ground water, water course or sewage system.
 - Danger to drinking water if even small quantities leak into the ground.
 - Also poisonous for fish and plankton in water bodies.
 - Very toxic for aquatic organisms

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

14 Transport information

· TDG and DOT regulations:



- **Hazard class:** 2.3
- **Identification number:** UN1017
- **Packing group:** -
- **Proper shipping name (technical name):** CHLORE
- **Label:** 2.3+8
- **Packaging group:** -

· Maritime transport IMDG:



- **IMDG Class:** 2.3
- **UN Number:** 1017
- **Label:** 2.3+8
- **Packaging group:** -
- **EMS Number:** F-C,S-U
- **Marine pollutant:** Yes

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· **Propper shipping name:** CHLORINE

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



· **ICAO/IATA Class:** 2.3

· **UN/ID Number:** 1017

· **Label:** 2.3+8

· **Packaging group:** -

· **Propper shipping name:** CHLORINE

15 Regulations

· **Sara**

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

Substance is listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is 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 not listed.

· **Carcinogeny categories**

· **EPA (Environmental Protection Agency)**

Substance is not listed.

· **NTP (National Toxicology Program)**

Substance is not listed.

· **TLV (Threshold Limit Value established by ACGIH)**

A4

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

Substance is not listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

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· 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:

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

· Hazard symbols:

Toxic

Dangerous for the environment

· Risk phrases:

Toxic by inhalation.

Irritating to eyes, respiratory system and skin.

Very toxic to aquatic organisms.

· Safety phrases:

Keep container in a well-ventilated place.

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

Avoid release to the environment. Refer to special instructions/safety data sheets.

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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