



**MATERIAL SAFETY DATA SHEET**

**PRODUCT NAME: CARBON TETRACHLORIDE**

**1. Chemical Product and Company Identification**

**BOC Gases,  
Division of  
The BOC Group, Inc.  
575 Mountain Avenue  
Murray Hill, NJ 07974**

**BOC Gases  
Division of  
BOC Canada Limited  
5975 Falbourn Street, Unit 2  
Mississauga, Ontario L5R 3W6**

**TELEPHONE NUMBER:** (908) 464-8100  
**24-HOUR EMERGENCY TELEPHONE NUMBER:**  
CHEMTREC (800) 424-9300

**TELEPHONE NUMBER:** (905) 501-1700  
**24-HOUR EMERGENCY TELEPHONE NUMBER:**  
(905) 501-0802  
**EMERGENCY RESPONSE PLAN NO:** 20101

**PRODUCT NAME:** CARBON TETRACHLORIDE  
**CHEMICAL NAME:** Carbon Tetrachloride  
**COMMON NAMES/SYNONYMS:** Carbon Chloride, Carbon Tet, Halon 1040, R 10  
**TDG (Canada) CLASSIFICATION:** 6.1 (9.2)  
**WHMIS CLASSIFICATION:** D1A, D2A, D2B

**PREPARED BY:** Loss Control (908)464-8100/(905)501-1700  
**PREPARATION DATE:** 6/1/95  
**REVIEW DATES:** 6/7/96

**2. Composition, Information on Ingredients**

INGREDIENT	% VOLUME	PEL-OSHA <sup>1</sup>	TLV-ACGIH <sup>2</sup>	LD <sub>50</sub> or LC <sub>50</sub> Route/Species
Carbon Tetrachloride FORMULA: CCl <sub>4</sub> CAS: 56-23-5 RTECS #: FG4900000	100.0	10 ppm TWA 25 ppm Ceiling	5 ppm TWA 10 ppm STEL Skin	LD <sub>50</sub> 2350 mg/kg (rat)

<sup>1</sup> As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)

<sup>2</sup> As stated in the ACGIH 1994-95 Threshold Limit Values for Chemical Substances and Physical Agents

**3. Hazards Identification**

EMERGENCY OVERVIEW
Inhalation of high concentrations of this compound may cause dizziness, nausea and possible loss of consciousness. Chronic exposure to this material may result in toxicity to the liver. Suspect carcinogen and reproductive toxin. Nonflammable. Decomposes into phosgene and hydrogen chloride under fire conditions.

**ROUTE OF ENTRY:**

Skin Contact Yes	Skin Absorption Yes	Eye Contact Yes	Inhalation Yes	Ingestion Yes
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**HEALTH EFFECTS:**

Exposure Limits Yes	Irritant Yes	Sensitization No
Teratogen Yes	Reproductive Hazard Yes	Mutagen Yes
Synergistic Effects None Reported		

Carcinogenicity: -- NTP: Yes IARC: Yes OSHA: No

**EYE EFFECTS:**

Contact with product may cause mild irritation.

**SKIN EFFECTS:**

Contact with product could cause mild irritation. Prolonged contact may cause defatting of the skin and dermatitis. This product can be absorbed in harmful quantity through contact with unprotected skin.

**INGESTION EFFECTS:**

Ingestion effects are similar to effects from inhalation.

**INHALATION EFFECTS:**

Short term exposure may cause headache, dizziness and irritation to the respiratory system. Carbon tetrachloride is a central nervous system depressant and may cause loss of consciousness at high concentrations.

Chronic exposures may cause liver damage.

Long term exposures may also increase the risk of some forms of cancer.

This product is suspected of having adverse reproductive effects and is an experimental mutagen.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:**

Individuals with anemia, diseases of the central nervous system or diseases of the kidney or liver should not be exposed to carbon tetrachloride.

**NFPA HAZARD CODES**

Health: 3  
Flammability: 0  
Reactivity: 0

**HMIS HAZARD CODES**

Health: 3  
Flammability: 0  
Reactivity: 0

**RATINGS SYSTEM**

0 = No Hazard  
1 = Slight Hazard  
2 = Moderate Hazard  
3 = Serious Hazard  
4 = Severe Hazard

**4. First Aid Measures**

**EYES:**

Flush eyes immediately with lukewarm water for at least 15 minutes. A physician should see the patient promptly.

**SKIN:**

Remove contaminated clothing and flush affected areas with water. Seek medical attention.

**INGESTION:**

CALL LOCAL POISON CONTROL CENTER. If conscious, induce vomiting and continue until vomit is clear. A physician should see the patient promptly.

**INHALATION:**

**MSDS:** G-22

**Revised:** 6/7/96

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PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area and given artificial resuscitation and supplemental oxygen. Medical assistance should be sought immediately. Further treatment should be symptomatic and supportive.

## 5. Fire Fighting Measures

Conditions of Flammability: Nonflammable		
Flash point: None	Method: Not Applicable	Autoignition Temperature: None
LEL(%): None	UEL(%): None	
Hazardous combustion products: None		
Sensitivity to mechanical shock: None		
Sensitivity to static discharge: None		

### **FIRE AND EXPLOSION HAZARDS:**

Decomposes under fire conditions into phosgene and hydrogen chloride.

### **EXTINGUISHING MEDIA:**

None required. Use media appropriate for surrounding materials.

### **FIRE FIGHTING INSTRUCTIONS:**

Fire fighters should use self-contained breathing apparatus to protect them from toxic decomposition products. If possible, use water spray to cool containers to prevent rupture.

## 6. Accidental Release Measures

Evacuate all personnel from affected area. Use appropriate protective equipment. 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 container valve, contact the appropriate emergency telephone number listed in Section 1 or call your closest BOC location.

## 7. Handling and Storage

### **Electrical Classification:**

Nonhazardous.

Incompatible with aluminum and zinc.

Use only in well-ventilated areas. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Protect containers from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where containers are stored to exceed 130°F (54°C). Containers should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty containers should be segregated. Use a "first in-first out" inventory system to prevent full containers being stored for excessive periods of time. Vapors should not be allowed to contact open flames. For additional storage recommendations, consult Compressed Gas Association's Pamphlet P-1.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

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## 8. Exposure Controls, Personal Protection

### EXPOSURE LIMITS<sup>1</sup>:

INGREDIENT	% VOLUME	PEL-OSHA <sup>2</sup>	TLV-ACGIH <sup>3</sup>	LD <sub>50</sub> or LC <sub>50</sub> Route/Species
Carbon Tetrachloride FORMULA: CCl <sub>4</sub> CAS: 56-23-5 RTECS #: FG4900000	100.0	10 ppm TWA 25 ppm Ceiling	5 ppm TWA 10 ppm STEL Skin	LD <sub>50</sub> 2350 mg/kg (rat)

<sup>1</sup> Refer to individual state of provincial regulations, as applicable, for limits which may be more stringent than those listed here.

<sup>2</sup> As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)

<sup>3</sup> As stated in the ACGIH 1994-1995 Threshold Limit Values for Chemical Substances and Physical Agents.

### ENGINEERING CONTROLS:

Hood with forced ventilation. Use local exhaust to prevent accumulation above the exposure limit.

### EYE/FACE PROTECTION:

Safety goggles or glasses

### SKIN PROTECTION:

Protective Gloves: Nitrile or Viton.

### RESPIRATORY PROTECTION:

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

### OTHER/GENERAL PROTECTION:

Safety shoes, safety shower, eyewash "fountain."

## 9. Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Liquid	
Vapor pressure at at 70 °F	: 98	mmHg
Vapor density (Air = 1)	: 5.5	
Evaporation point	: Not Available	
Boiling point	: 170	°F
	: 76.5	°C
Freezing point	: -9.4	°F
	: -23	°C
pH	: Not Available	
Specific gravity	: Not Available	
Oil/water partition coefficient	: Not Available	
Solubility (H <sub>2</sub> O)	: Insoluble (0.08%)	
Odor threshold	: Not Available	
Odor and appearance	: Colorless liquid with strong ethereal odor.	

## 10. Stability and Reactivity

### STABILITY:

Stable.

### INCOMPATIBLE MATERIALS:

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PRODUCT NAME: CARBON TETRACHLORIDE

Reacts with zinc, aluminum and alkali metals. Decomposes in open flame or at high temperatures.

**HAZARDOUS DECOMPOSITION PRODUCTS:**

Hydrogen chloride, phosgene.

**HAZARDOUS POLYMERIZATION:**

Will not occur.

## 11. Toxicological Information

**TUMORIGENIC:**

An experimental carcinogen in experimental animal studies including rats, mice and hamsters.

**REPRODUCTIVE:**

Developmental defects observed following inhalation exposure of pregnant rats to 250 ppm for 8 hours.

**MUTAGENIC:**

A mutagen in mammalian and bacterial cell assay systems.

**OTHER:**

Degenerative changes to liver following chronic inhalation exposure in multiple animal studies with mammalian species including rats, mice, rabbits, guinea pigs, dogs and monkeys. Toxic effects to the lungs, immune system and bladder have also been reported in animal studies with mammalian species.

## 12. Ecological Information

No data given.

## 13. Disposal Considerations

Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to BOC Gases or authorized distributor for proper disposal.

## 14. Transport Information

PARAMETER	United States DOT	Canada TDG
PROPER SHIPPING NAME:	Carbon Tetrachloride (R-10)	Carbon Tetrachloride (R-10)
HAZARD CLASS:	6.1	6.1 (9.2)
IDENTIFICATION NUMBER:	UN 1846	UN 1846
SHIPPING LABEL:	POISON	POISON

**Additional Marking Requirement:** If net weight of product  $\geq 10$  pounds, the container must be also marked with the letters "RQ". **Additional Shipping Paper Description Requirement:** If net weight of product  $\geq 10$  pounds, the shipping papers must be also marked with the letters "RQ". PG: II

## 15. Regulatory Information

### SARA TITLE III NOTIFICATIONS AND INFORMATION

Releases of carbon tetrachloride in quantities equal to or greater than the reportable quantity (RQ) of 10 pounds are subject to reporting to the National Response Center under CERCLA, Section 304 SARA Title III.

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**SARA TITLE III - HAZARD CLASSES:**

Acute Health Hazard  
Chronic Health Hazard

**SARA TITLE III - SECTION 313 SUPPLIER NOTIFICATION:**

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372:

CAS NUMBER	INGREDIENT NAME	PERCENT BY VOLUME
56-23-5	CARBON TETRACHLORIDE	100.0

This information must be included on all MSDSs that are copied and distributed for this material.

**16. Other Information**

Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with his/her (written) consent is a violation of transportation regulations.

**DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:**

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).