

# MATERIAL SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**MATHESON TRI-GAS, INC.**  
**150 Allen Road Suite 302**  
**Basking Ridge, New Jersey 07920**  
**Information: 1-800-416-2505**

**Emergency Contact:**  
**CHEMTREC 1-800-424-9300**  
**Calls Originating Outside the US:**  
**703-527-3887 (Collect Calls Accepted)**

### **SUBSTANCE: CARBON TETRACHLORIDE**

#### **TRADE NAMES/SYNONYMS:**

CARBON CHLORIDE (CCl<sub>4</sub>); PERCHLOROMETHANE; TETRACHLOROMETHANE;  
BENZINOFORM; RCRA U211; R 10 (REFRIGERANT); UN 1846; CCl<sub>4</sub>; MAT04310; RTECS  
FG4900000

**CHEMICAL FAMILY:** halogenated, aliphatic

**CREATION DATE:** Jan 24 1989

**REVISION DATE:** Dec 11 2008

## 2. COMPOSITION, INFORMATION ON INGREDIENTS

**COMPONENT:** CARBON TETRACHLORIDE  
**CAS NUMBER:** 56-23-5  
**PERCENTAGE:** 100

## 3. HAZARDS IDENTIFICATION

**NFPA RATINGS (SCALE 0-4):** HEALTH=3 FIRE=1 REACTIVITY=0



#### **EMERGENCY OVERVIEW:**

**COLOR:** colorless

**PHYSICAL FORM:** liquid

**ODOR:** distinct odor

**MAJOR HEALTH HAZARDS:** central nervous system depression, suspect cancer hazard (in animals)

#### **POTENTIAL HEALTH EFFECTS:**

##### **INHALATION:**

**SHORT TERM EXPOSURE:** irritation, digestive disorders, headache, drowsiness, dizziness, loss of coordination, lung congestion, effects on the brain, convulsions, coma

**LONG TERM EXPOSURE:** irritation, digestive disorders, headache, drowsiness, dizziness, loss of coordination, visual disturbances, lung congestion, kidney damage, liver damage, reproductive effects, effects on the brain, convulsions, coma, cancer

**SKIN CONTACT:**

**SHORT TERM EXPOSURE:** irritation, rash, absorption may occur, digestive disorders, headache, drowsiness, dizziness, loss of coordination, lung congestion, effects on the brain, convulsions, coma

**LONG TERM EXPOSURE:** visual disturbances, kidney damage, liver damage, reproductive effects, cancer

**EYE CONTACT:**

**SHORT TERM EXPOSURE:** irritation

**LONG TERM EXPOSURE:** no information is available

**INGESTION:**

**SHORT TERM EXPOSURE:** irritation, digestive disorders, headache, drowsiness, dizziness, loss of coordination, lung congestion, effects on the brain, convulsions, coma

**LONG TERM EXPOSURE:** kidney damage, liver damage, cancer

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## 4. FIRST AID MEASURES

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**INHALATION:** If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

**SKIN CONTACT:** Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

**EYE CONTACT:** Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

**INGESTION:** If swallowed, drink plenty of water, do NOT induce vomiting. Get immediate medical attention. Induce vomiting only at the instructions of a physician. Do not give anything by mouth to unconscious or convulsive person.

**NOTE TO PHYSICIAN:** For ingestion, consider gastric lavage.

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## 5. FIRE FIGHTING MEASURES

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**FIRE AND EXPLOSION HAZARDS:** Slight fire hazard.

**EXTINGUISHING MEDIA:** regular dry chemical, regular foam, water

Large fires: Use regular foam or flood with fine water spray.

**FIRE FIGHTING:** Move container from fire area if it can be done without risk. Fight large fires from a protected location or safe distance. Stay away from the ends of tanks. Dike for later disposal. Do not scatter

spilled material with high-pressure water streams. Do not attempt to extinguish fire unless flow of material can be stopped first. Use extinguishing agents appropriate for surrounding fire. Flood with fine water spray. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Consider downwind evacuation if material is leaking.

**FLASH POINT:** not flammable

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## 6. ACCIDENTAL RELEASE MEASURES

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### **AIR RELEASE:**

Reduce vapors with water spray. Stay upwind and keep out of low areas.

### **SOIL RELEASE:**

Trap spilled material at bottom in deep water pockets, excavated holding areas or within sand bag barriers. Dike for later disposal. Absorb with sand or other non-combustible material. Collect with absorbent into suitable container.

### **WATER RELEASE:**

Trap spilled material at bottom in deep water pockets, excavated holding areas or within sand bag barriers. Remove trapped material with suction hoses. Absorb with activated carbon. Collect spilled material using mechanical equipment. Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.

### **OCCUPATIONAL RELEASE:**

Do not touch spilled material. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Small dry spills: Move containers away from spill to a safe area. Large spills: Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

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## 7. HANDLING AND STORAGE

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**STORAGE:** Store and handle in accordance with all current regulations and standards. Protect from physical damage. Store in a cool, dry place. Store in a well-ventilated area. Avoid heat, flames, sparks and other sources of ignition. Keep separated from incompatible substances.

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## 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

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**EXPOSURE LIMITS:**

**CARBON TETRACHLORIDE:**

10 ppm OSHA TWA

25 ppm OSHA ceiling

200 ppm OSHA peak (5 minutes in any 4 hours)

2 ppm (12.6 mg/m<sup>3</sup>) OSHA TWA (vacated by 58 FR 35338, June 30, 1993)

5 ppm ACGIH TWA (cutaneous absorption danger)

10 ppm ACGIH STEL (cutaneous absorption danger)

2 ppm (12.6 mg/m<sup>3</sup>) NIOSH recommended STEL 60 minute(s)

**VENTILATION:** Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

**EYE PROTECTION:** Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**CLOTHING:** Wear appropriate chemical resistant clothing.

**GLOVES:** Wear appropriate chemical resistant gloves.

**RESPIRATOR:** The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

**At any detectable concentration -**

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

**Escape -**

Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted organic vapor canister.

Any appropriate escape-type, self-contained breathing apparatus.

**For Unknown Concentrations or Immediately Dangerous to Life or Health -**

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**PHYSICAL STATE:** liquid

**APPEARANCE:** clear

**COLOR:** colorless

**ODOR:** distinct odor

**MOLECULAR WEIGHT:** 153.82

**MOLECULAR FORMULA:** C-Cl<sub>4</sub>

**BOILING POINT:** 171 F (77 C)

**FREEZING POINT:** -9 F (-23 C)

**VAPOR PRESSURE:** 91.3 mmHg @ 20 C

**VAPOR DENSITY (air=1):** 5.32

**SPECIFIC GRAVITY (water=1):** 1.5940

**WATER SOLUBILITY:** 0.08% @ 20 C

**PH:** Not available

**VOLATILITY:** 100%

**ODOR THRESHOLD:** 50 ppm

**EVAPORATION RATE:** 12.8 (butyl acetate=1)

**COEFFICIENT OF WATER/OIL DISTRIBUTION:** Not available

**SOLVENT SOLUBILITY:**

**Soluble:** alcohol, benzene, chloroform, ether, carbon disulfide, petroleum ether, naphtha, acetone, fixed & volatile oils

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## 10. STABILITY AND REACTIVITY

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**REACTIVITY:** Stable at normal temperatures and pressure.

**CONDITIONS TO AVOID:** Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

**INCOMPATIBILITIES:** combustible materials, metal salts, peroxides, halogens, oxidizing materials, metals, bases, amines

**HAZARDOUS DECOMPOSITION:**

Thermal decomposition products: phosgene, halogenated compounds, oxides of carbon

**POLYMERIZATION:** Will not polymerize.

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## 11. TOXICOLOGICAL INFORMATION

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**CARBON TETRACHLORIDE:**

**IRRITATION DATA:** 4 mg skin-rabbit mild; 500 mg/24 hour(s) skin-rabbit mild; 2200 ug/30 second(s) eyes-rabbit mild; 500 mg/24 hour(s) eyes-rabbit mild

**TOXICITY DATA:** 8000 ppm/4 hour(s) inhalation-rat LC50; >20 gm/kg skin-rabbit LD50; 2350 mg/kg oral-rat LD50

**CARCINOGEN STATUS:** NTP: Anticipated Human Carcinogen; IARC: Animal Sufficient Evidence, Human Inadequate Evidence, Group 2B; ACGIH: A2 -Suspected Human Carcinogen; EC: Category 3

**ACUTE TOXICITY LEVEL:**

Moderately Toxic: ingestion

Slightly Toxic: inhalation, dermal absorption

**TARGET ORGANS:** central nervous system, liver, kidneys

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** history of alcoholism, alcoholism

**TUMORIGENIC DATA:** Available.

**MUTAGENIC DATA:** Available.

**REPRODUCTIVE EFFECTS DATA:** Available.

**ADDITIONAL DATA:** May cross the placenta. May be excreted in breast milk. Alcohol may enhance the toxic effects. Stimulants such as epinephrine may induce ventricular fibrillation.

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## 12. ECOLOGICAL INFORMATION

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**ECOTOXICITY DATA:**

**FISH TOXICITY:** 43100 ug/L 96 hour(s) LC50 (Mortality) Fathead minnow (*Pimephales promelas*)

**INVERTEBRATE TOXICITY:** 1500 ug/L 7 hour(s) EC50 (Regeneration) Flatworm (*Dugesia japonica*)

**ALGAL TOXICITY:** >136000 ug/L NR hour(s) EC10 (Population Growth) Green algae (*Haematococcus pluvialis*)

**OTHER TOXICITY:** 900 ug/L 8 hour(s) EC50 (Teratogenesis) Leopard frog (*Rana pipiens*)

**FATE AND TRANSPORT:**

**BIOCONCENTRATION:** 30 ug/L 1-21 hour(s) BCF (Residue) Bluegill (*Lepomis macrochirus*) 52.3 ug/L

**ENVIRONMENTAL SUMMARY:** Moderately toxic to aquatic life.

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## 13. DISPOSAL CONSIDERATIONS

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Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): U211. Hazardous Waste Number(s): D019. Dispose of in accordance with U.S. EPA 40 CFR 262 for concentrations at or above the Regulatory level. Regulatory level- 0.5 mg/L.

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## 14. TRANSPORT INFORMATION

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**U.S. DOT 49 CFR 172.101:**

**PROPER SHIPPING NAME:** Carbon tetrachloride

**ID NUMBER:** UN1846

**HAZARD CLASS OR DIVISION:** 6.1

**PACKING GROUP:** II

**LABELING REQUIREMENTS:** 6.1

**MARINE POLLUTANT:** CARBON TETRACHLORIDE



**CANADIAN TRANSPORTATION OF DANGEROUS GOODS:**

**SHIPPING NAME:** Carbon tetrachloride

**UN NUMBER:** UN1846

**CLASS: 6.1**

**PACKING GROUP/CATEGORY: II**

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## **15. REGULATORY INFORMATION**

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### **U.S. REGULATIONS:**

**CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):**

**Carbon tetrachloride: 10 LBS RQ**

**SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart B):** Not regulated.

**SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart C):** Not regulated.

**SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370 Subparts B and C):**

ACUTE: Yes

CHRONIC: Yes

FIRE: No

REACTIVE: No

SUDDEN RELEASE: No

**SARA TITLE III SECTION 313 (40 CFR 372.65):**

**Carbon tetrachloride**

**OSHA PROCESS SAFETY (29 CFR 1910.119):** Not regulated.

### **STATE REGULATIONS:**

**California Proposition 65:**

Known to the state of California to cause the following:

**Carbon tetrachloride**

Cancer (Oct 01, 1987)

### **CANADIAN REGULATIONS:**

**WHMIS CLASSIFICATION:** Not determined.

### **NATIONAL INVENTORY STATUS:**

**U.S. INVENTORY (TSCA):** Listed on inventory.

**TSCA 12(b) EXPORT NOTIFICATION:** Not listed.

**CANADA INVENTORY (DSL/NDL):** Not determined.

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## 16. OTHER INFORMATION

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