

# SAFETY DATA SHEET



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## CARBON TETRACHLORIDE, TECHNICAL GRADE

SDS No.: M47013  
- North America - EN

Rev. Date: 17-Mar-2021

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### SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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<b>Company Identification:</b>	Occidental Chemical Corporation 14555 Dallas Parkway, Suite 400 Dallas, Texas 75254-4300
<b>24 Hour Emergency Telephone Number:</b>	1-800-733-3665 (USA); CANUTEC (Canada): 1-613-996-6666; CHEMTREC (within USA and Canada): 1-800-424-9300; CHEMTREC (outside USA and Canada): +1 703-527-3887; CHEMTREC Contract No: CCN16186
<b>To Request an SDS:</b>	MSDS@oxy.com or 1-972-404-3245
<b>Customer Service:</b>	1-800-752-5151 or 1-972-404-3700
<b>Product Identifier:</b>	<b>CARBON TETRACHLORIDE, TECHNICAL GRADE</b>
<b>Synonyms:</b>	CARBON TET; Tetrachloromethane; Perchloromethane; METHANE TETRACHLORIDE
<b>Product Use:</b>	Feedstock for the manufacture of refrigerants; catalyst regeneration and incinerator testing
<b>Uses Advised Against:</b>	Should not be used in any applications that are not authorized under the Montreal Protocol, which is implemented in the United States under the federal Clean Air Act regulations 40 CFR Part 82, Subpart A. Such uses include, but are not limited to, dry cleaning, fire extinguishers, and aerosol propellants.
<b>Restrictions on Use (United States):</b>	FOR INDUSTRIAL USE ONLY. Use of carbon tetrachloride in consumer products is banned by the Consumer Product Safety Commission (CPSC), under the Federal Hazardous Substance Act (FHSA) 16 CFR 1500.17.
<b>Restrictions on Use (EU):</b>	Carbon tetrachloride is restricted by regulation (EC) No 1804/2003 of the

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European Parliament and of the Council of 22 September 2003 amending Regulation (EC) No 2037/2000, on substances that deplete the ozone layer.

**Other Global Restrictions on Use:**

Carbon tetrachloride is considered an ozone depleting substance (ODS) and its production and use are controlled under the 1987 Montreal Protocol on Substances That Deplete the Ozone Layer and its amendments (Montreal Protocol Annex B – Group II). Other restrictions on use based on local, regional, or national regulations may exist and must be determined on a case-by-case basis.

**Chemical Family:**

Aliphatic halogenated solvent

## SECTION 2. HAZARDS IDENTIFICATION

**OSHA REGULATORY STATUS:** This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

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### EMERGENCY OVERVIEW:

**Color:** Colorless  
**Physical State:** Liquid  
**Appearance:** Clear  
**Odor:** Mildly sweet odor, Characteristic, ether-like odor

**Signal Word:** **DANGER**

**MAJOR HEALTH HAZARDS:** MAY BE HARMFUL IF SWALLOWED. MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS. HARMFUL IF INHALED. CAUSES SKIN IRRITATION. MAY BE ABSORBED THROUGH THE SKIN. CAUSES EYE IRRITATION. MAY CAUSE DROWSINESS OR DIZZINESS. SUSPECTED OF CAUSING CANCER. SUSPECTED OF DAMAGING FERTILITY OR THE UNBORN CHILD. CAUSES DAMAGE TO LIVER, KIDNEY, AND LUNGS (PULMONARY EDEMA). CAUSES DAMAGE TO LIVER, KIDNEY, AND BLOOD THROUGH PROLONGED OR REPEATED EXPOSURE. ALCOHOL CONSUMPTION MAY INCREASE TOXIC EFFECTS.

**AQUATIC TOXICITY:** HARMFUL TO AQUATIC LIFE. TOXIC TO AQUATIC LIFE WITH LASTING EFFECTS. Marine Pollutant.

**PRECAUTIONARY STATEMENTS:** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist, vapors, or spray. Wash skin and contaminated clothing thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, eye, and face protection. Avoid release to the environment.

**ADDITIONAL HAZARD INFORMATION:** Warning: Contains Carbon Tetrachloride, a substance which harms public health and environment by destroying ozone in the upper atmosphere.

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**HAZARD CLASSIFICATION:**

<b>GHS: CONTACT HAZARD - SKIN:</b>	Category 2 - Causes skin irritation
<b>GHS: CONTACT HAZARD - EYE:</b>	Category 2B - Causes eye irritation
<b>GHS: ACUTE TOXICITY - INHALATION:</b>	Category 4 - Harmful if inhaled
<b>GHS: ASPIRATION HAZARD:</b>	Category 1 - May be fatal if swallowed and enters airways
<b>GHS: TARGET ORGAN TOXICITY (SINGLE EXPOSURE):</b>	Category 1 - Causes damage to Liver, Kidney, and Lungs Category 3 - May cause drowsiness or dizziness
<b>GHS: TARGET ORGAN TOXICITY (REPEATED EXPOSURE):</b>	Category 1 - Causes damage to Liver and Kidney through prolonged or repeated exposure
<b>GHS: CARCINOGENICITY:</b>	Category 2 - Suspected of causing cancer
<b>GHS: HAZARDOUS TO THE OZONE LAYER:</b>	Category 1 - Harms the public health and the environment by destroying ozone in the upper atmosphere
<b>HAZARDS NOT OTHERWISE CLASSIFIED (HNOC):</b>	- ACUTE TOXICITY - ORAL: Category 5 (May be harmful if swallowed) - ACUTE AQUATIC HAZARD - CATEGORY 3: Harmful to aquatic life - AQUATIC TOXICITY - CHRONIC : Category 2: Toxic to aquatic life with long lasting effects

**UNKNOWN ACUTE TOXICITY:** Not applicable.

**GHS SYMBOL:** Exclamation mark, Health hazards, Environmental hazard



**GHS SIGNAL WORD:** DANGER

**GHS HAZARD STATEMENTS:**

**GHS - Health Hazard Statement(s)**

- Harmful if swallowed
- May be fatal if swallowed and enters airways
- Harmful if inhaled
- Causes skin irritation
- Causes eye irritation
- May cause drowsiness or dizziness
- Suspected of causing cancer
- Causes damage to Liver, Kidney and Lungs (Pulmonary Edema)
- Causes damage to liver and kidneys through prolonged and repeated exposure

**GHS - Environmental Hazard Statement(s)**

- Harmful to aquatic life
- Toxic to aquatic life with long lasting effects
- Harms public health and the environment by destroying ozone in the upper atmosphere

**GHS - Precautionary Statement(s) - Prevention**

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- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Do not breathe mist, vapors, or spray
- Wash skin and contaminated clothing thoroughly after handling
- Do not eat, drink or smoke when using this product
- Use only outdoors or in a well-ventilated area
- Wear eye protection, face protection, protective gloves, protective clothing
- Avoid release to the environment

## GHS - Precautionary Statement(s) - Response

- IF SWALLOWED: Immediately call a POISON CENTER OR LICENSED HEALTH CARE PROVIDER
- Do NOT induce vomiting
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell
- IF ON SKIN: Wash with plenty of soap and water
- If skin irritation occurs: Get medical advice/attention
- Take off contaminated clothing and wash it before reuse
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- If eye irritation persists: Get medical advice/attention
- IF exposed or concerned: Get medical advice/attention
- IF exposed: Call a POISON CENTER OR LICENSED HEALTH CARE PROVIDER
- Collect spillage

## GHS - Precautionary Statement(s) - Storage

- Store in a well-ventilated place. Keep container tightly closed
- Store in a secure manner

## GHS - Precautionary Statement(s) - Disposal

- Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations
- Refer to manufacturer/supplier for information on recovery/recycling

## Physical Hazards Not Otherwise Classified

- Harms public health and the environment by destroying ozone in the upper atmosphere

## Hazard Not Otherwise Classified (HNOC)-Health

- Alcohol consumption may increase toxic effects
- May be absorbed through the skin
- Harms public health and the environment by destroying ozone in the upper atmosphere

See Section 11: TOXICOLOGICAL INFORMATION

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	Percent [%]
Carbon Tetrachloride	56-23-5	99.5 - 100

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## SECTION 4. FIRST AID MEASURES

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**INHALATION:** If inhaled and adverse effects occur, remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

**SKIN CONTACT:** IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs, get medical advice/attention. Take off contaminated clothing and wash before reuse. See Notes to Physician below and Section 11 for more information.

**EYE CONTACT:** If in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.

**INGESTION:** IF SWALLOWED, immediately contact a POISON CENTER or LICENSED HEALTH CARE PROVIDER. Do NOT induce vomiting.

### **Most Important Symptoms/Effects (Acute and Delayed):**

#### **Acute Symptoms/Effects:**

**Inhalation (Breathing):** Respiratory System Effects: Central Nervous System (CNS) effects are characteristic following inhalation of chlorinated hydrocarbons and can range from lightheadedness at low level exposures to loss of consciousness at high levels. CNS effects are an early warning that exposure to high levels has occurred and there is risk of cardiac effects (palpitations, low blood pressure, arrhythmia, arrest). CNS effects include the following symptoms: abdominal pain, nausea, vomiting, headache, lightheadedness, blurry or double vision, personality changes, weakness, slurred speech, stupor, incoordination (disequilibrium, ataxia), coma, and respiratory arrest. May irritate upper airways. Pulmonary edema and liver and kidney injury can be delayed by days.

**Skin:** Skin Irritation. Skin exposure may cause burning and prickling sensations, itching, irritation, red skin, edema, small peripheral blisters.

**Eye:** Eye Irritation. Eye exposure may cause irritation, tearing, pain, conjunctivitis, clouding of cornea.

**Ingestion (Swallowing):** Ingesting this material may cause gastrointestinal irritation, central nervous system (CNS) depression, CNS symptoms such as sedation, headache, tremor, vision disturbances, memory problems, nausea, vomiting, headache, breathing difficulty, reduced blood pressure, tachycardia, oliguria or anuria, severe liver injury (See Section 11). Ingestion may cause unconsciousness and death.

#### **Delayed Symptoms/Effects:**

- Delayed pulmonary edema has been reported as long as 8 days after the initial intoxication associated with renal failure
- Reduced renal output (oliguria)
- Renal (kidney) failure
- Elevation of liver enzymes
- Liver failure
- May cause chronic dermatitis - rough, dry, red skin due to extraction of fatty materials
- May cause eye damage such as corneal damage, decreased vision

**Protection of First-Aiders:** Protect against vapor/gas exposure. Protect against liquid contamination. Use personal protective equipment (PPE). Refer to Section 8 for specific PPE recommendations. Consider the possibility

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of high levels of gas in confined/unventilated spaces or low-lying areas.

**Notes to Physician:** There is no antidote for carbon tetrachloride poisoning. Treatment consists of support of respiratory, cardiovascular, hepatic, and renal functions. Catecholamine administration after exposure to this compound MAY pose enhanced risk of cardiac arrhythmia. This material is an aspiration hazard. For ingestion, nasogastric aspiration is recommended if volume ingested is of sufficient volume to aspirate. Protect the airway. Epinephrine and other sympathomimetic amines may initiate cardiac arrhythmias in individuals exposed and experiencing symptoms from this material. This compound is absorbed rapidly by oral administration and causes similar effects to inhalation exposure. Activated charcoal may be administered. Liver, kidney, and pulmonary injury may be delayed several days after exposure. May cross the placenta and may be excreted in breast milk.

**Interaction with Other Chemicals Which Enhance Toxicity:** General and liver toxicity is significantly increased by alcohols, ketones and other chemicals that use the same metabolic pathways: acetaminophen, phenobarbital, methamphetamine, barbiturates, brominated or chlorinated solvents, DDT, PBB, chlordecone, nicotine, carbon disulfide, or other alkyl disulfides. Hypoxia may also increase sensitivity to toxicity. May potentiate other agents that cause Central Nervous System (CNS) depression and respiratory system depression. Catecholamine administration MAY pose increased risk of cardiac arrhythmias.

**Medical Conditions Aggravated by Exposure:** May increase potential for cardiac arrhythmia. Liver disorders, kidney disorders, respiratory system disorders.

## SECTION 5. FIRE-FIGHTING MEASURES

**Fire Hazard:** Negligible fire hazard.

**Extinguishing Media:** Use extinguishing agents appropriate for surrounding fire.

**Fire Fighting:** Wear NIOSH approved positive-pressure self-contained breathing apparatus operated in pressure demand mode. Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Flood with fine water spray. Do not scatter spilled material with high-pressure water streams. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

Component	Immediately Dangerous to Life/ Health (IDLH)
Carbon Tetrachloride 56-23-5	200 ppm IDLH

**Hazardous Combustion Products:** Hydrogen chloride; Chlorine; Phosgene; Oxides of carbon

**Sensitivity to Mechanical Impact:** Not sensitive.

**Sensitivity to Static Discharge:** Not sensitive.

**Lower Flammability Level (air):** Not applicable

**Upper Flammability Level (air):** Not applicable

**Flash point:** Not flammable

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**Auto-ignition Temperature:** Not flammable

**Physical Hazards Not Otherwise Classified**

- Harms public health and the environment by destroying ozone in the upper atmosphere

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

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**Personal Precautions:** Most vapors are heavier than air and will spread along ground and collect in low or confined areas (drains, basements, tanks). Do not breathe vapors, mist, or spray. Ventilate confined spaces before entering. Exposure in an enclosed or poorly ventilated area may be very harmful. Keep unnecessary people away, isolate hazard area and deny entry. Evacuation of surrounding area may be necessary for large spills. Shut off ventilation system if needed. Do not get in eyes, on skin or on clothing. Wear appropriate personal protective equipment recommended in Section 8 of the SDS.

**Environmental Precautions:** Keep out of water supplies and sewers. Avoid discharge into drains, surface water or groundwater. Releases should be reported, if required, to appropriate regulatory agencies.

**Methods and Materials for Containment, Confinement, and/or Abatement:** Stop leak, if possible, without personal risk. Ventilate closed spaces before entering. Completely contain spilled materials with dikes, sandbags, etc. Collect with appropriate absorbent and place into suitable container. Keep container tightly closed and properly labeled. Liquid material may be removed with a properly rated vacuum truck. Properly dispose of in accordance with all applicable regulations. See Section 13, Disposal considerations, for additional information.

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## SECTION 7. HANDLING AND STORAGE

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### Handling:

**Precautions for Safe Handling:** Use only outdoors or in a well-ventilated area. Do not use cutting or welding torches, open flames or electric arcs on empty or full containers. Protect from physical damage. Do not enter confined spaces without following proper confined space entry procedures.

**Technical measures/precautions:** Chlorinated organics handling equipment must not be constructed of any reactive metals such as aluminum, zinc, brass or magnesium alloys. Do not store in aluminum container or use aluminum fittings or transfer lines, as flammable hydrogen gas may be generated.

**Prevention of contact:** Use personal protection recommended in Section 8. Do not breathe mist, vapor, or spray. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash skin and contaminated clothing thoroughly after handling. Do not eat, drink or smoke when using this product.

### Storage:

**Safe Storage Conditions:** Store and handle in accordance with all current regulations and standards. Keep container properly labeled and tightly closed. Store in a cool, dry area. Protect from sunlight. Prevent water or moist air from entering storage tanks or containers. Store in a well-ventilated area. Keep separated from incompatible substances (see below or Section 10 of the Safety Data Sheet).

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**Technical measures:** Do not store in aluminum container or use aluminum fittings or transfer lines, as flammable hydrogen gas may be generated.

**Incompatible Substances:** Bases, Oxygen, Peroxides, Alkali metals, Reactive metals, Aluminum, Sodium, Potassium, Oxidizing agents

**Packaging Material:** Container management: Containers are non-refillable. Do not reuse or refill containers. Offer for recycling if available. Offer for reconditioning if appropriate. Triple rinse container promptly after emptying. Do not reuse drum without recycling or reconditioning in accordance with any applicable federal, state or local laws. Contact manufacturer/supplier for information on recovery/recycling.

**Physical Hazards Not Otherwise Classified**

- Harms public health and the environment by destroying ozone in the upper atmosphere

**SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION****REGULATORY EXPOSURE LIMIT(S):**

Listed below for the product components that have regulatory occupational exposure limits (OEL's).

Component	OSHA Final PEL TWA	OSHA Final PEL STEL	OSHA Final PEL Ceiling
Carbon Tetrachloride 56-23-5 (99.5 - 100 %)	10 ppm	-----	25 ppm

OEL: Occupational Exposure Limit; OSHA: United States Occupational Safety and Health Administration; PEL: Permissible Exposure Limit; TWA: Time Weighted Average; STEL: Short Term Exposure Limit  
OSHA Ceiling values indicate the exposure limit, which at no time shall be exceeded. Instantaneous monitoring is the preferred method to determine compliance with OSHA Ceiling values. If instantaneous monitoring is not feasible, then the ceiling shall be assessed as a 15-minute time weighted average exposure which shall not be exceeded at any time during the working day [29CFR1910.1000(a)(1)]

Component	Canada - TWAs	Canada - STELs	Canada - Ceilings
Carbon Tetrachloride 56-23-5 (99.5 - 100 %)	Ontario - 2 ppm (TWA) Alberta - 5 ppm (TWA) Alberta - 31 mg/m <sup>3</sup> (TWA) British Columbia - 2 ppm (TWA)	Ontario - 3 ppm (STEL)	-----

**NON-REGULATORY EXPOSURE LIMIT(S):**

Listed below are the product components that have advisory (non-regulatory) occupational exposure limits (OEL's) established.

Component	ACGIH TWA	ACGIH STEL	ACGIH Ceiling	Skin Absorption - ACGIH	OSHA TWA (Vacated)	OSHA STEL (Vacated)	OSHA Ceiling (Vacated)
Carbon	5 ppm	10 ppm	-----	Listed	2 ppm	-----	-----

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Tetrachloride 56-23-5 (99.5 - 100 %)					12.6 mg/m <sup>3</sup>		
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- The Non-Regulatory United States Occupational Safety and Health Administration (OSHA) limits, if shown, are the Vacated 1989 PEL's (vacated by 58 FR 35338, June 30, 1993).

- The American Conference of Governmental Industrial Hygienists (ACGIH) is a voluntary organization of professional industrial hygiene personnel in government or educational institutions in the United States. The ACGIH develops and publishes recommended occupational exposure limits each year called Threshold Limit Values (TLVs) for hundreds of chemicals, physical agents, and biological exposure indices.

**Additional Advice:** EPA, in the risk evaluation process conducted under the Toxic Substances Control Act ("TSCA"), determined unreasonable risks from commercial uses of this chemical to workers in direct contact and workers nearby but not in direct contact with carbon tetrachloride (known as occupational non-users). This includes unreasonable risks when manufacturing the chemical; processing the chemical as a reactant or intermediate and into formulation of other products; laboratory uses; recycling; uses in a variety of industrial and commercial applications; and disposal. Unreasonable risk determinations were based upon workers and occupational non-user's potential exposure from long-term inhalation, without respiratory protection, or dermal (through the skin) exposures for workers not wearing appropriate personal protective equipment (PPE). EPA is preparing a draft risk mitigation rule for uses that were determined to have unreasonable risks. The information below addresses engineering controls and PPE to reduce exposure.

**ENGINEERING CONTROLS:** Use closed systems when possible. Provide local exhaust ventilation where vapor or mist may be generated. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. In case of insufficient ventilation, wear suitable respiratory equipment. All process sampling must be performed using a closed loop sampling system. Ensure compliance with applicable exposure limits.

**PERSONAL PROTECTIVE EQUIPMENT:**

**Eye Protection:** Wear chemical safety goggles with a face shield to protect against eye and skin contact when appropriate. Provide an emergency eyewash fountain and quick drench shower in the immediate work area.

**Skin and Body Protection:** Wear chemical resistant clothing to prevent skin contact. Contaminated clothing should be removed, then discarded or laundered.

**Hand Protection:** Wear appropriate chemical resistant gloves. This material may be readily absorbed through the skin.

**Protective Material Types:** Viton®, Polyvinyl alcohol (PVA)

**Respiratory Protection:** Where vapor concentration exceeds or is likely to exceed applicable exposure limits, a NIOSH approved respirator is required. 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 full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Escape - Any air-purifying respirator with a full facepiece and an organic vapor canister. Any appropriate escape-type, self-contained breathing apparatus. For Unknown Concentrations or exposures above IDLH (Immediately Dangerous to Life or Health) - Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

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Component	Immediately Dangerous to Life/ Health (IDLH)
Carbon Tetrachloride 56-23-5 (99.5 - 100 %)	200 ppm IDLH

**Other Protective Equipment:** Provide an emergency eyewash fountain and quick drench shower in the immediate work area.

**HYGIENE MEASURES:** Obtain proper training prior to use. Contaminated work clothing should not be allowed out of the workplace. For environmental protection remove and wash all contaminated protective equipment before re-use. Good hygiene practices include but are not limited to: wearing suitable chemical resistant gloves; eye protection; washing hands and affected skin immediately after handling, before breaks, and at the end of the workday; regularly cleaning work area and clothing; etc.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State:</b>	Liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Mildly sweet odor Characteristic, ether-like odor
<b>Molecular Weight:</b>	153.8
<b>Molecular Formula:</b>	C-Cl <sub>4</sub>
<b>Chemical Family:</b>	Aliphatic halogenated solvent
<b>pH:</b>	No data available
<b>Melting Point/Range:</b>	-23 (°C)
<b>Freezing Point/Range:</b>	-9 °F (-23 °C)
<b>Boiling Point °C</b>	76.8°C
<b>Flash point:</b>	Not flammable
<b>Vapor Pressure:</b>	115 mm Hg at 25°C
<b>Vapor Density (air=1):</b>	5.32
<b>Relative Density/Specific Gravity (water=1):</b>	1.59 @ 25 °C
<b>Water Solubility:</b>	793 mg/L at 25°C
<b>Partition Coefficient (n-octanol/water):</b>	2.83
<b>Auto-ignition Temperature:</b>	Not flammable
<b>Odor Threshold [ppm]:</b>	Odor recognition in air for chemically pure is 21.4 ppm; however, can be as high as 250 ppm
<b>Evaporation Rate (ether=1):</b>	0.3
<b>Volatility:</b>	100%
<b>Flammability (solid, gas):</b>	Not applicable
<b>Lower Flammability Level (air):</b>	Not applicable
<b>Upper Flammability Level (air):</b>	Not applicable
<b>Viscosity:</b>	No data available
<b>Dynamic viscosity:</b>	2.03 mPa·s at -23°C
<b>Surface tension:</b>	3.23X10 <sup>-2</sup> N/m @ 25.33 K

**SECTION 10. STABILITY AND REACTIVITY**

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**Chemical Stability:** Stable at normal temperatures and pressures.

**Reactivity:** Not reactive under normal temperatures and pressures. May react explosively with alkali metals.

**Possibility of Hazardous Reactions:** Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. Avoid contact with incompatible substances and conditions due to generation of phosgene and other toxic and irritating substances.

**Conditions to Avoid (e.g., static discharge, shock, or vibration):** None known.

**Incompatible Substances:** Bases. Oxygen. Peroxides. Alkali metals. Reactive metals. Aluminum. Sodium. Potassium. Oxidizing agents.

**Hazardous Decomposition Products:** Hydrogen chloride, Chlorine, Phosgene, Oxides of Carbon.

**Hazardous Polymerization:** Will not occur.

## SECTION 11. TOXICOLOGICAL INFORMATION

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**POTENTIAL HEALTH EFFECTS:**

**ACUTE TOXICITY:**

The liver and kidney are the primary sites of induced toxicity. No adverse effects are expected at 10 ppm based on both animal and human data. Exposures of >33 ppm have caused symptoms of central nervous system depression in humans and animals as well as symptoms of liver dysfunction. Alcoholics are particularly susceptible. In one case involving inhalation of carbon tetrachloride by an alcoholic, the lethal exposure level was estimated at 250 ppm for 15 minutes. Nonalcoholic workers were exposed at the same level for 4 hours with no significant clinical signs other than slight headache. Swallowing small amounts of this material (1-10 mL) is harmful and may cause death.

**Eye contact:** Vapors may cause mild eye irritation with tearing, redness, or a stinging or burning feeling. Liquids or mist cause severe irritation with redness and pain.

**Skin contact:** May cause skin irritation with redness, an itching or burning feeling, and swelling of the skin. May be absorbed through the skin to cause effects as detailed in inhalation.

**Inhalation:** May cause respiratory tract irritation. Breathing this material is harmful and may cause death depending upon level and duration of exposure. Breathing excessively high concentrations of this material can have a direct sensitizing effect on the heart which may lead to irregular heartbeats that may cause death. Exposure leads to rapid depression of the central nervous system. Alcohol consumption increases the toxic effects.

**Ingestion:** May be harmful if swallowed. Lung aspiration hazard if swallowed. Lung aspiration may result in chemical pneumonitis, pulmonary edema, and damage to lung tissue or death.

**CHRONIC TOXICITY:**

In animals, subchronic/chronic exposure by various routes also results in damage to respiratory, cardiac, neural and reproductive/fetal tissues and in reduced body weight, although generally at doses greater or equal to those producing hepatic effects. Limited evidence of immune system effects in animals has been reported.

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**Chronic Effects:** Chronic overexposure is known to cause liver and kidney damage in animals and humans. Toxic amounts may be absorbed through the skin to cause chronic health effects. As in acute exposures, drinking alcohol may increase the potential for toxic effects. Persons suffering from malnutrition also might be more sensitive. Repeated or prolonged contact may result irritation and dermatitis due to the defatting action on the skin. Effects on vision have been observed in some cases. May cause cancer based on animal data. In animal studies, blood disorders and male reproductive effects have been observed. The relevance of these observations to humans is not clear at this time. Sufficient evidence in animals of fetal toxicity at maternally toxic doses.

## SIGNS AND SYMPTOMS OF EXPOSURE:

**Inhalation (Breathing):** Respiratory System Effects: Central Nervous System (CNS) effects are characteristic following inhalation of chlorinated hydrocarbons and can range from lightheadedness at low level exposures to loss of consciousness at high levels. CNS effects are an early warning that exposure to high levels has occurred and there is risk of cardiac effects (palpitations, low blood pressure, arrhythmia, arrest). CNS effects include the following symptoms: abdominal pain, nausea, vomiting, headache, lightheadedness, blurry or double vision, personality changes, weakness, slurred speech, stupor, incoordination (disequilibrium, ataxia), coma, and respiratory arrest. May irritate upper airways. Pulmonary edema and liver and kidney injury can be delayed by days.

**Skin:** Skin Irritation. Skin exposure may cause burning and prickling sensations, itching, irritation, red skin, edema, small peripheral blisters.

**Eye:** Eye Irritation. Eye exposure may cause irritation, tearing, pain, conjunctivitis, clouding of cornea.

**Ingestion (Swallowing):** Ingesting this material may cause gastrointestinal irritation, central nervous system (CNS) depression, CNS symptoms such as sedation, headache, tremor, vision disturbances, memory problems, nausea, vomiting, headache, breathing difficulty, reduced blood pressure, tachycardia, oliguria or anuria, severe liver injury (See Section 11). Ingestion may cause unconsciousness and death.

**Interaction with Other Chemicals Which Enhance Toxicity:** General and liver toxicity is significantly increased by alcohols, ketones and other chemicals that use the same metabolic pathways: acetaminophen, phenobarbital, methamphetamine, barbiturates, brominated or chlorinated solvents, DDT, PBB, chlordecone, nicotine, carbon disulfide, or other alkyl disulfides. Hypoxia may also increase sensitivity to toxicity. May potentiate other agents that cause Central Nervous System (CNS) depression and respiratory system depression. Catecholamine administration MAY pose increased risk of cardiac arrhythmias.

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## GHS HEALTH HAZARDS:

**GHS: CONTACT HAZARD - SKIN:** Category 2 - Causes skin irritation

**GHS: CONTACT HAZARD - EYE:** Category 2B - Causes eye irritation

**GHS: ACUTE TOXICITY - ORAL:** Category 5 - May be harmful if swallowed

**GHS: ACUTE TOXICITY - INHALATION:** Category 4 - Harmful if inhaled

**GHS: TARGET ORGAN TOXICITY (SINGLE EXPOSURE):**

Category 1 - Causes damage to Liver, Kidney, and Lungs

Category 3 - May cause drowsiness or dizziness

**GHS: TARGET ORGAN TOXICITY (REPEATED EXPOSURE):**

Category 1 - Causes damage to Liver and Kidney through prolonged or repeated exposure

**GHS: ASPIRATION HAZARD:** Category 1 - May be fatal if swallowed and enters airways

**GHS: CARCINOGENICITY:** Category 2 - Suspected of causing cancer

## TOXICITY DATA:

**PRODUCT TOXICITY DATA:** Product level testing data as noted below:.

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<b>LD50 Oral:</b> 2350 mg/kg oral-rat LD50	<b>LD50 Dermal:</b> >15 gm/kg skin-rabbit LD50	<b>LC50 Inhalation:</b> 8000 ppm (4 hr. - Rat)
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**COMPONENT TOXICITY DATA:** The component toxicity data is populated by the LOLI database and may differ from the product toxicity data given.

Component	Oral LD50	Dermal LD50	Inhalation LC50
Carbon Tetrachloride	2350 mg/kg (Rat)	5070 mg/kg (Rat)	8000 ppm (4-h Rat)

**Standard Draize (Eye):** 2.2 mg/30 second(s) eyes-rabbit mild; 500 mg/24 hour(s) eyes-rabbit mild.

**Eye Irritation/Corrosion:** Very light reddening and edema of the conjunctiva without cornea damage after 24 hours of applying 0.1 ml to conjunctiva sac of rabbits. No abnormal findings were detected after 48 hours. This product is classified as causing serious eye irritation (Category 2B) per GHS criteria.

**Standard Draize (Skin):** 4 mg skin-rabbit mild; 500 mg/24 hour(s) skin-rabbit mild

**Skin Irritation/Corrosion:** There are reports of "moderately irritating" results in skin irritation tests using rabbits and guinea pigs. The product is classified as cutaneous irritant (Category 2), according to GHS classification criteria.

**Skin Absorbent / Dermal Route:** Yes.

The level of dermal absorption from the gaseous phase is low. The rate of dermal absorption of liquid carbon tetrachloride by intact mouse skin was found to be 8.3 ug/cm<sup>2</sup> a minute. Direct skin exposure to a high dose of carbon tetrachloride (CCl<sub>4</sub>) can cause systemic effects.

**RESPIRATORY OR SKIN SENSITIZATION:** There is weak evidence of dermal sensitization in mice using the Local Lymph Node Assay (LLNA) test. Not classified as a skin or respiratory sensitizer per GHS criteria.

**CARCINOGENICITY:** Evidence of cancers from multiple species (humans, rats, mice) and multiple tumor types (liver, brain, adrenal) in both sexes and by multiple routes of exposure (oral and inhalation) contribute to the weight of the scientific evidence for overall cancer classification of carcinogenic effects, which is "likely to be carcinogenic to humans". Classified as Category 2 under GHS (suspected of causing cancer).

**SPECIFIC TARGET ORGAN TOXICITY (Single Exposure):** Regardless of the route of absorption, the clinical picture of carbon tetrachloride intoxication is dominated in the first 24 hours by gastrointestinal and neurological symptoms. Liver damage occurs at the earliest after 24 hours. In severe cases ascites and hepatic coma develop and are often accompanied by hemorrhage. Kidney damage is first manifest after 2-3 days, often not until 2-3 weeks after the intoxication. Pulmonary edema is a common finding in humans exposed to lethal levels of carbon tetrachloride in air. Thirteen fatal cases were reported following acute inhalation exposure in humans. Inhalation of carbon tetrachloride leads to rapid depression of the central nervous system. Depending on exposure levels, common signs of central nervous system effects include headache, giddiness, weakness, lethargy, and stupor.

**SPECIFIC TARGET ORGAN TOXICITY (Repeated or Prolonged Exposure):** Carbon tetrachloride is a powerful hepatotoxic agent in humans and animals. The principal clinical signs of liver injury are swollen and tender liver, elevated levels of hepatic enzyme (aspartate aminotransferase) in the serum, elevated serum bilirubin levels and the appearance of jaundice, and decreased serum levels of proteins such as albumin and fibrinogen. In addition, repeated chronic exposure leads in some cases to fibrosis and/or cirrhosis of the liver. Chronic exposure (6 hours/day, 5 days/week for 2 years) to carbon tetrachloride vapor caused renal effects in rodents, with rats being more sensitive than mice.

**INHALATION HAZARD:** This product is classified as HARMFUL IF INHALED (Category 4) per GHS criteria.

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**GERM CELL/IN-VITRO MUTAGENICITY:** Many genetic toxicity (in-vitro and in-vivo) tests are available in the literature, with all results being considered in a weight of evidence approach, the overall conclusion is that carbon tetrachloride is not genotoxic in-vivo / in-vitro.

**REPRODUCTIVE TOXICITY:** Effects on the reproductive organs (e.g., testes, uterus, etc.) have not been observed in sub-chronic and chronic animal studies, which suggests that carbon tetrachloride is not likely to be a reproductive toxicant, and that any potential reproductive effects could be only induced at much higher doses than liver toxicity.

**DEVELOPMENTAL TOXICITY:** Limited evidence from gestational exposure studies in animals suggest that developmental toxicity is not an acute effect nor the most sensitive effect for carbon tetrachloride. Developmental toxicity has been observed at oral and inhalation doses accompanied by some degree of maternal toxicity.

**ASPIRATION HAZARD:** Category 1 - May be fatal if swallowed and enters airways.

**TOXICOKINETICS:** Carbon tetrachloride is rapidly absorbed by any route of exposure. However, it is noted that the dermally absorbed fraction would be negligible for exposures to carbon tetrachloride vapor. Once absorbed, carbon tetrachloride is widely distributed among tissues, especially those with high lipid content, reaching peak concentrations in <1–6 hours, depending on exposure concentration or dose. Animal studies show that volatile metabolites are released in exhaled air, whereas nonvolatile metabolites are excreted in feces and to a lesser degree, in urine.

**METABOLISM:** Carbon tetrachloride is metabolized in the body, primarily by the liver, but also in the kidney, lung, and other tissues containing CYP450 enzymes. Based on reasonably available information, the initial step in biotransformation of carbon tetrachloride is reductive dehalogenation: reductive cleavage of one carbon-chlorine bond to yield chloride ion and the trichloromethyl radical. Biotransformation of carbon tetrachloride to reactive metabolites, including the trichloromethyl radical, is hypothesized to be a key event in the toxicity of carbon tetrachloride.

**ENDOCRINE DISRUPTOR:** Carbon tetrachloride is listed on The Endocrine Disruptors Exchange's (TEDX) List of Potential Endocrine Disruptors database of chemicals with the potential to affect the endocrine system. Every chemical on the TEDX List has one or more verified citations published, accessible, primary scientific research demonstrating effects on the endocrine system. An increased incidence of pheochromocytomas (a neuroendocrine tumor of adrenal chromaffin cells-derived from neural crest stem cells) associated with carbon tetrachloride by oral and inhalation exposure in male and female mice, but not in rats by either route of exposure, has been observed.

**NEUROTOXICITY:** Not Available.

**IMMUNOTOXICITY:** Not available.

**Hazard Not Otherwise Classified (HNOC)-Health**

- Alcohol consumption may increase toxic effects
- May be absorbed through the skin
- Harms public health and the environment by destroying ozone in the upper atmosphere

**SECTION 12. ECOLOGICAL INFORMATION****ECOTOXICITY (EC, IC, and LC):**

Component:	Freshwater Fish:	Invertebrate Toxicity:	Algae Toxicity:	Other Toxicity:
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Carbon Tetrachloride 56-23-5 (99.5 - 100 %)	*LC50 Pimephales promelas: 36.3 - 47.3 mg/L 96h flow-through *LC50 Pimephales promelas: 9.68 - 11.3 mg/L 96h static *LC50 Lepomis macrochirus: 23 - 33 mg/L 96h static	*1500 ug/L 7 hour(s) EC50 (Regeneration) Flatworm (Dugesia japonica)	*EC50 Tetrahymena pyriformis (24 h) =830 mg/L	No data available
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**Aquatic Toxicity:**

ACUTE AQUATIC HAZARD - CATEGORY 3: Harmful to aquatic life

CHRONIC AQUATIC HAZARD - CATEGORY 2: Toxic to aquatic life with long lasting effects

**FATE AND TRANSPORT:**

**PERSISTENCE:** AIR: Vapor-phase carbon tetrachloride will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 366 years. Direct carbon tetrachloride photolysis is not important in the troposphere, but irradiation at higher energies (195-254 nm) such as found in the stratosphere, results in degradation and leads to ozone depletion. It is stable in the troposphere with residence time of 30-50 years. WATER: Primary loss will be by evaporation into the atmosphere. This material is not expected to adsorb to suspended solids and sediment in water. This material has a negligible rate of hydrolysis. Henry's Law constant is  $2.76 \times 10^{-2}$  atm-cu m/mole. SOIL: This material is expected to have high mobility in soil based upon a Koc of 71.

**BIODEGRADATION:** The overwhelming evidence suggests that aerobic biodegradation is very slow and anaerobic biodegradation is moderate to rapid.

- 6 to 12 months (soil - estimated)
- 7 days to 12 months (aerobic water)
- 3 days to 4 weeks (anaerobic water)
- 13 days to 19 months (anaerobic wastewater treatment).

**BIOCONCENTRATION:** 30 ug/L 1-21 hour(s) BCF (Residue) Bluegill (Lepomis macrochirus) 52.3 ug/L. This material is not expected to bioconcentrate, with an estimated bioconcentration factor of 3.2-7.4.

**BIOACCUMULATIVE POTENTIAL:** Estimated and measured BCF and BAF values ranging from 19– 40 indicate that carbon tetrachloride has low bioaccumulation potential in aquatic organisms.

**MOBILITY IN SOIL:** The Koc for carbon tetrachloride was measured to be 71. According to a classification scheme, this Koc value suggests that carbon tetrachloride is expected to have high mobility in soil. The estimated retardation factor range in breakthrough sampling in groundwater has been reported as 1.44 - 1.8.

**ADDITIONAL ECOLOGICAL INFORMATION:** Carbon tetrachloride is considered an ozone depleting substance (ODS) and its production and use are controlled under the 1987 Montreal Protocol on Substances That Deplete the Ozone Layer and its amendments (Montreal Protocol Annex B – Group II).

**SECTION 13. DISPOSAL CONSIDERATIONS**

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**Waste from material:**

Reuse or reprocess, if possible. Dispose in accordance with all applicable regulations. Subject to disposal regulations.

- Wastewater: Carbon tetrachloride may be contained in wastewater discharged to POTW or other, non-public treatment works for treatment. Industrial wastewater containing carbon tetrachloride discharged to a POTW may be subject to EPA or authorized NPDES state pretreatment programs.

- Solid Waste: Carbon tetrachloride is both a listed and a characteristic hazardous waste. Carbon tetrachloride is a non-specific-source listed hazardous waste under waste number F001 (spent halogenated degreasing solvents) [40 CFR Section 261.31] and a source-specific listed hazardous waste under waste number K016 (heavy ends or distillation residues from the production of carbon tetrachloride, which may contain residual carbon tetrachloride) [40 CFR Section 261.32]. Discarded, commercial-grade carbon tetrachloride is a listed hazardous waste under waste number U211 40 CFR § 261.33.

**Container Management:**

Dispose of container in accordance with applicable local, regional, national, and/or international regulations. Refer to manufacturer/supplier for information on recovery/recycling. Containers are non-refillable. Do not reuse or refill containers. Offer for recycling if available. Offer for reconditioning if appropriate. Triple rinse container promptly after emptying. Container rinsate must be disposed of in compliance with applicable regulations.

**Contaminated Material:**

Carbon tetrachloride is a toxic contaminant under RCRA with waste number D019. A solid waste can be a hazardous waste due to its toxicity characteristic if its extract following the Toxicity Characteristic Leaching Procedure (TCLP) (or the liquid waste itself if it contains less than 0.5% filterable solids) contains at least 0.5 mg/L of carbon tetrachloride [40 CFR Section 261.24]. Contaminated packaging must be disposed of as unused product by a licensed / permitted waste disposal service.

**SECTION 14. TRANSPORT INFORMATION****LAND TRANSPORT****U.S. DOT 49 CFR 172.101:**

**UN NUMBER:** UN1846  
**PROPER SHIPPING NAME:** Carbon tetrachloride  
**HAZARD CLASS/ DIVISION:** 6.1  
**PACKING GROUP:** II  
**LABELING REQUIREMENTS:** 6.1  
**MARINE POLLUTANT:** Carbon tetrachloride

**RQ (lbs.):** RQ 10 Lbs. (Carbon tetrachloride)

**CANADIAN TRANSPORTATION OF DANGEROUS GOODS:**

**UN NUMBER:** UN1846  
**SHIPPING NAME:** Carbon tetrachloride  
**CLASS OR DIVISION:** 6.1  
**PACKING/RISK GROUP:** II  
**LABELING REQUIREMENTS:** 6.1  
**CAN. MARINE POLLUTANT:** Carbon Tetrachloride

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RQ (lbs): RQ 10 Lbs. (Carbon tetrachloride)

**MARITIME TRANSPORT (IMO / IMDG)**

**UN NUMBER:** UN1846  
**PROPER SHIPPING NAME:** Carbon tetrachloride  
**HAZARD CLASS / DIVISION:** 6.1  
**Packing Group:** II  
**LABELING REQUIREMENTS:** 6.1  
**MARINE POLLUTANT:** Carbon Tetrachloride

**AIR TRANSPORT (ICAO / IATA)**

**Special Instructions CAO:** IATA Certificate for shipping personnel is required

**SECTION 15. REGULATORY INFORMATION****U.S. REGULATIONS****OSHA REGULATORY STATUS:**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

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

If a release is reportable under CERCLA section 103, notify the state emergency response commission and local emergency planning committee. In addition, notify the National Response Center at (800) 424-8802 or (202) 426-2675.

Component	U.S. DOT Hazardous Substances/ RQs	CERCLA Hazardous Substances / RQs	CERCLA Section 302 EHS EPCRA RQs	Section 302 Threshold Planning Quantity (TPQ)
Carbon Tetrachloride 56-23-5 (99.5 - 100 )	10 lbs(RQ)	10 lb(final RQ)	Not listed	Not Listed

**SARA EHS Chemical (40 CFR 355.30)**

Not regulated.

**EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.10):**

Acute Health Hazard, Chronic Health Hazard, Extremely Hazardous

**SARA HAZARD CATEGORIES ALIGNED WITH GHS (2018):**

Health Hazard - Carcinogen  
 Health Hazard - Acute Toxin (any route of exposure)  
 Health Hazard - Skin Corrosion or Irritation  
 Health Hazard - Serious eye damage or eye irritation  
 Health Hazard - Specific Target Organ Toxicity (STOT) Single Exposure (SE)  
 Health Hazard - Aspiration Hazard  
 Health Hazard - Specific Target Organ Toxicity (STOT) Repeat Exposure (RE)  
 Health Hazard - HNOC  
 Physical Hazard - HNOC

**EPCRA SECTION 313 (40 CFR 372.65):**

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The following chemicals are listed in 40 CFR 372.65 and may be subject to Community Right-to Know Reporting requirements.

Component	SARA 313 - Emission Reporting	SARA 313 PBT
Carbon Tetrachloride 56-23-5 (99.5 - 100 %)	0.1% (de minimis concentration)	Not Listed

**DEPARTMENT OF HOMELAND SECURITY (DHS)- Chemical Facility Anti-Terrorism Standards (6 CFR 27):**  
Product is not regulated under DHS

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

**EPA'S CLEAN WATER AND CLEAN AIR ACTS:**

This substance contains the ozone-depleting substance (ODS) Carbon Tetrachloride which is regulated as a Class I controlled substance by the U.S. Environmental Protection Agency. Class I substances have been completely phased out in the U.S., except for exemptions allowed under 40 CFR Part 82 (ODS regulations) and the Montreal Protocol. Those exemptions include feedstock (transformation) uses, destruction, certain process agent uses, and specific essential uses.

Component	Clean Water Act - Priority Pollutants	CAA - ODS CLASS 1 AND CLASS 2	CAA - Volatile Organic Compounds (VOCs) in SOCM1	CAA - HON Rule - Organic HAPs	CAA - Hazard Air Pollutants	CAA - Urban HAPs List (Integrated Urban Strategy)	SNAP - Substitutes for ODS	EPA RMP Toxic or Flammable TPQ
Carbon Tetrachloride 56-23-5 (99.5 - 100 %)	Present	Class I ODS	Present	Present	Present	Not Listed	Not Listed	Not Listed

**NATIONAL INVENTORY STATUS****U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA):**

Component	TSCA Inventory	TSCA ACTIVE LIST	TSCA 12(b)	TSCA - Section 4	TSCA - Section 5	TSCA - Section 6	TSCA - Section 8
Carbon Tetrachloride 56-23-5 (99.5 - 100 %)	Listed	ACTIVE	Not Listed	Not listed	Not Listed	Chemicals subject to Risk Evaluation	Not listed

**CANADIAN CHEMICAL INVENTORY:** All components are listed.

Component	DSL	NDSL
Carbon Tetrachloride 56-23-5 (99.5 - 100 %)	Listed	Not Listed

**STATE REGULATIONS****California Proposition 65:**

This product contains a chemical known to the State of California to cause cancer, and/or birth defects, and/or other reproductive harm.

Component	California Proposition 65 Cancer WARNING:	California Proposition 65 CRT List - Male reproductive toxin:	California Proposition 65 CRT List - Female reproductive toxin:	Massachusetts Right to Know Hazardous Substance List	Rhode Island Right to Know Hazardous Substance List
Carbon Tetrachloride 56-23-5 (99.5 - 100 %)	Listed	Not Listed	Not Listed	Listed	Listed

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Component	New Jersey Right to Know Hazardous Substance List	New Jersey Special Health Hazards Substance List	New Jersey - Environmental Hazardous Substance List	Pennsylvania Right to Know Hazardous Substance List	Pennsylvania Right to Know Special Hazardous Substances	Pennsylvania Right to Know Special Hazardous Substances	Pennsylvania Right to Know Environmental Hazard List
Carbon Tetrachloride	0347	carcinogen	Listed	Listed	Present	Present	Present

**CANADIAN REGULATIONS**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

Component	Canada - CEPA - Schedule I - List of Toxic Substances	Canada - NPRI	Canada - CEPA - 2010 Greenhouse Gases (GHG) Subject to Mandatory Reporting	CANADIAN CHEMICAL INVENTORY:	NDSL:
Carbon Tetrachloride 56-23-5 (99.5 - 100 )	Present (018) Present (065)	Part 1, Group 1 Substance Part 4 Substance	Not Listed	Listed	Not Listed

**SECTION 16. OTHER INFORMATION**

**Prepared by:** Occidental Chemical Corporation - HES&S Product Stewardship Department

**Rev. Date:** 17-Mar-2021

**Reason for Revision:**

- Change of company physical address: SEE SECTION 1
- Updated 24 Hour Emergency Telephone Number: SEE SECTION 1
- Updated Product Use information: SEE SECTION 1
- Added emphasis on Uses Advised Against: SEE SECTION 1
- Added restrictions on use: See SECTION 1
- Modified the Emergency Overview information: SEE SECTION 2
- GHS Symbol(s) added or changed: SEE SECTION 2
- Modified GHS Hazard and Precautionary Statements: SEE SECTION 2
- Revised Handling and Storage Recommendations: SEE SECTION 7
- Added ACGIH Skin Notation to table in Section 8
- Added an explanation statement for "Ceiling Value" exposure levels: SEE SECTION 8
- Emphasis placed on use of enclosed processing systems: SEE SECTION 8
- Added Canadian exposure levels: SEE SECTION 8
- Additional advice added to discuss EPA risk assessment process under TSCA: SEE SECTION 8
- Requirements for emergency eyewash and shower added: SEE SECTION 8
- Added Hygiene Measures SEE SECTION 8
- Updated Physical and Chemical Properties. SEE SECTION 9
- Toxicological Information has been revised: SEE SECTION 11
- Ecological Information has been modified: SEE SECTION 12
- Updated Disposal Considerations. SEE SECTION 13
- Added air transport certificate requirements for shipping personnel: SEE SECTION 14

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- Revised SARA Hazard Categories 311/312 HAZARD CATEGORIES (40 CFR 370.21): SEE SECTION 15
- WHMIS Classifications were removed from format: SEE SECTION 15
- Added LOLI tables such as EPA'S Clean Water / Air Act, TSCA status, DHS, PSM, EPCRA, CERCLA, Federal Canadian: SEE SECTION 15

### IMPORTANT:

The information presented herein, while not guaranteed, was prepared by technical personnel and is true and accurate to the best of our knowledge. NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OR GUARANTY OF ANY OTHER KIND, EXPRESSED OR IMPLIED, IS MADE REGARDING PERFORMANCE, SAFETY, SUITABILITY, STABILITY OR OTHERWISE. This information is not intended to be all-inclusive as to the manner and conditions of use, handling, storage, disposal and other factors that may involve other or additional legal, environmental, safety or performance considerations, and Occidental Chemical Corporation assumes no liability whatsoever for the use of or reliance upon this information. While our technical personnel will be happy to respond to questions, safe handling and use of the product remains the responsibility of the customer. No suggestions for use are intended as, and nothing herein shall be construed as, a recommendation to infringe any existing patents or to violate any federal, state, local or foreign laws.

OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Safety Data Sheet available to your employees.

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**End of Safety Data Sheet**