Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Common Name/Trade Name: Carbon tetrachloride

Catalog Number(s): C1981

CAS#: 56-23-5

RTECS: FG4900000

TSCA: TSCA 8(b) inventory: Carbon tetrachloride

CI#: Not available.

Manufacturer: SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

Commercial Name(s): Benzinoform; Carbon TET; Carbona; Flukoids; Necatorina; Perchloromethane; Tetrafinit; Tetraform; Tetrasol; Univerm

Synonym: Tetrachloromethane; Methane Tetrachloride; Tetrachloormetaan; Tetrachlorocarbon

Chemical Name: Methane, tetrachloro-

Chemical Family: Not available.

Chemical Formula: CCl4

Supplier: SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

Section 2. Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
<th>CEIL (mg/m³)</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Carbon tetrachloride</td>
<td>56-23-5</td>
<td>2</td>
<td></td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

Toxicological Data

Exposure Limits

<table>
<thead>
<tr>
<th>Name</th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
<th>CEIL (mg/m³)</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon tetrachloride</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Section 3. Hazards Identification

Potential Acute Health Effects

Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Slightly hazardous in case of skin contact (permeator), of ingestion. Severe over-exposure can result in death.

Continued on Next Page
**Potential Chronic Health Effects**

Hazardous in case of inhalation.

**CARCINOGENIC EFFECTS**: Classified 2B (Possible for human.) by IARC. Classified A2 (Suspected for human.) by ACGIH, 2 (Some evidence.) by NTP.

**MUTAGENIC EFFECTS**: Mutagenic for bacteria and/or yeast.

**TERATOGENIC EFFECTS**: Not available.

**DEVELOPMENTAL TOXICITY**: Not available.

The substance may be toxic to kidneys, liver, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

## Section 4. First Aid Measures

### Eye Contact

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. WARM water MUST be used. Get medical attention.

### Skin Contact

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

### Serious Skin Contact

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

### Inhalation

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

### Serious Inhalation

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

### Ingestion

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

### Serious Ingestion

Not available.

## Section 5. Fire and Explosion Data

### Flammability of the Product

Non-flammable.

### Auto-Ignition Temperature

Not applicable.

### Flash Points

Not applicable.

### Flammable Limits

Not applicable.

### Products of Combustion

Not available.

### Fire Hazards in Presence of Various Substances

Not applicable.

### Explosion Hazards in Presence of Various Substances

Risks of explosion of the product in presence of mechanical impact: Not available.

Risks of explosion of the product in presence of static discharge: Not available.

Explosive in presence of oxidizing materials, of metals.

### Fire Fighting Media and Instructions

Not applicable.

### Special Remarks on Fire Hazards

Not available.

### Special Remarks on Explosion Hazards

Carbon Tetrachloride can form impact-sensitive mixtures with: aluminum (when ball milled or heated to 152 deg, C), barium, beryllium, potassium, potassium-sodium alloy, sodium, zinc. Carbon Tetrachloride can for explosive mixtures with: Benzyol peroxide + ethylene, calcium hypochlorite(heat sensitive), calcium disilicide (friction/pressure sensitive), chlorine trifluoride, decaborane (impact sensitive), dinitrogen tetraoxide; disilane, lithium, magnesium powder, uranium (heat or impact sensitive), Triethylaluminum trichloride (heat sensitive), aluminum powder, fluorine gas, boranes, ethylene.
**Carbon tetrachloride**

### Section 6. Accidental Release Measures

**Small Spill**
Absorb with an inert material and put the spilled material in an appropriate waste disposal.

**Large Spill**
Poisonous liquid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

### Section 7. Handling and Storage

**Precautions**
Do not ingest. Do not breathe gas/fumes/vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, metals.

**Storage**
Keep container tightly closed. Keep container in a cool, well-ventilated area.

### Section 8. Exposure Controls/Personal Protection

**Engineering Controls**
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

**Personal Protection**
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill**
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits**
TWA: 10 CEIL: 25 (ppm) from OSHA (PEL) [United States]
TWA: 65 (mg/m³) from OSHA (PEL) [United States]
TWA: 2.0 from NIOSH [United States]
TWA: 12.6 (mg/m³) from NIOSH [United States]
TWA: 5 STEL: 10 (ppm) from ACGIH (TLV) [United States]
TWA: 2 (ppm) [United Kingdom (UK)]
TWA: 13 (mg/m³) [United Kingdom (UK)]
TWA: 2 STEL: 3 (ppm) [Canada]
TWA: 13 STEL: 19 (mg/m³) [Canada]
TWA: 5 (ppm) [Canada]
TWA: 31 (mg/m³) [Canada]

Consult local authorities for acceptable exposure limits.

### Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical state and appearance</th>
<th>Odor</th>
<th>Taste</th>
<th>Color</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Molecular Weight</th>
<th>pH (1% soln/water)</th>
<th>Boiling Point</th>
<th>Melting Point</th>
<th>Critical Temperature</th>
<th>Specific Gravity</th>
<th>Vapor Pressure</th>
<th>Vapor Density</th>
<th>Volatility</th>
<th>Odor Threshold</th>
<th>Water/Oil Dist. Coeff.</th>
</tr>
</thead>
<tbody>
<tr>
<td>153.82 g/mole</td>
<td>Not available.</td>
<td>76.8°C (170.2°F)</td>
<td>-23°C (-9.4°F)</td>
<td>283.2°C (541.8°F)</td>
<td>1.594 (Water = 1)</td>
<td>12.1 kPa (@ 20°C)</td>
<td>5.32 (Air = 1)</td>
<td>Not available.</td>
<td>50 ppm</td>
<td>The product is more soluble in oil; log(oil/water) = 2.8</td>
</tr>
</tbody>
</table>

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# Carbon tetrachloride

**Tonicity (in Water)**  
Not available.

**Dispersion Properties**  
See solubility in water, diethyl ether.

**Solubility**  
Soluble in diethyl ether.  
Very slightly soluble in cold water.  
Solubility in Water: 1160 mg/L at 25 deg. C.; 800 mg/L at 20 deg. C.  
Miscible in chloroform, carbon disulfide, petroleum ether, oils.

## Section 10. Stability and Reactivity Data

### Stability  
The product is stable.

### Instability Temperature  
Not available.

### Conditions of Instability  
Not available.

### Incompatibility with various substances  
Highly reactive with oxidizing agents, metals.

### Corrosivity  
Non-corrosive in presence of glass.

### Special Remarks on Reactivity  
Incompatible with aluminum (when ball milled or heated to 152 deg. C), aluminum powder, barium, beryllium, potassium, potassium-sodium alloy, sodium, zinc, benzyl peroxide + ethylene, calcium hypochlorite, calcium disilicide, chlorine trifluoride, decaborane, dinitrogen tetraoxide; disilane, lithium, magnesium powder, uranium, triethylaluminum trichloride, fluorine gas, boranes, ethylene, methanol, dimethyl formamide, 1,2,3,4,5,6-hexachlorocyclohexane, dimethylacetamide, 1,1-diamino-3,6,9-triazundecane, aluminum trichloride, dibenzyl peroxide, potassium tert-butoxide, zirconium, allyl alcohol, aluminum triethyl sesquichlorides, bromine trifluoride, diborane, liquid oxygen, plutonium, silver perchlorate + hydrochloric acid, tetraethylpentamine, tetrasiline, calcium perchlorate.

Methanol and carbon tetrachloride mixtures (9:1) react exothermically with aluminum, magnesium, and zinc. A potentially dangerous reaction forms between carbon tetrachloride and dimethyl formamide; 1,2,3,4,5,6-hexachlorocyclohexane; or dimethylacetamide in the presence of iron. A vigorous eruption can occur one hour after mixture of carbon tetrachloride and 1,11-diamino-3,6,9-triazaundecane.

### Special Remarks on Corrosivity  
Not available.

### Polymerization  
Will not occur.

## Section 11. Toxicological Information

### Routes of Entry  
Absorbed through skin. Eye contact. Inhalation. Ingestion.

### Toxicity to Animals  
**WARNING:** THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE.

- Acute oral toxicity (LD50): 2350 mg/kg [Rat].
- Acute dermal toxicity (LD50): 5070 mg/kg [Rat].
- Acute toxicity of the vapor (LC50): 9526 mg/m$^3$ 8 hours [Mouse].

### Chronic Effects on Humans  
**CARCINOGENIC EFFECTS:** Classified 2B (Possible for human.) by IARC. Classified A2 (Suspected for human.) by ACGIH. 2 (Some evidence.) by NTP.  
**MUTAGENIC EFFECTS:** Mutagenic for bacteria and/or yeast.  
May cause damage to the following organs: kidneys, liver, central nervous system (CNS).

### Other Toxic Effects on Humans  
Hazardous in case of skin contact (irritant), of inhalation. Slightly hazardous in case of skin contact (permeator), of ingestion.

### Special Remarks on Toxicity to Animals  
Lethal Dose/Conc 50% Kill:  
LD50[Guinea Pig] - Route: Oral; Dose: 5760 mg/kg;  
LD50[Mammal - unspecified species] - Route: Oral; Dose: 6000 mg/kg

### Special Remarks on Chronic Effects on Humans  
May cause adverse reproductive effects and birth defects (teratogenic). May cause cancer. May affect genetic material (mutagenic).
Carbon tetrachloride

Acute Potential Health Effects:
Skin: May cause mild to mild skin irritation with redness, swelling, pain. It may cause defatting dermatitis.
Eyes: May cause mild to moderate eye irritation. May cause conjunctivitis.
Inhalation: Harmful if inhaled. May cause impaired or depressed central nervous system activity (somnolence, general anesthetic, headache, lightheadedness, dizziness, drowsiness, convulsions, visual disturbances, coma). May cause abdominal pain, nausea, vomiting, anorexia, diarrhea. May affect the liver, kidneys, cardiovascular system. May cause metabolic acidosis. May cause death by respiratory failure.
Ingestion: May cause abdominal pain, nausea, vomiting, diarrhea. May affect behavior/central nervous system (tremor, ataxia, coma), eyes (pupillary constriction), heart, respiration (cyanosis, difficulty breathing), kidneys (nephritis), liver, blood (changes in serum composition).

Chronic Potential Health Effects:
Inhalation: Repeated or prolonged inhalation can cause nausea, diarrhea, lack of appetite, flatulence, vomiting, stomachache, hearing loss, damage to optic nerve (visual defects). It may affect the liver (jaundice, abnormal liver function tests, cirrhosis, liver damage), kidneys (kidney damage), blood/bone marrow (aplastic anemia, leukocytosis), spleen, adrenal glands, thyroid (thyroid damage), immune system (evoking an immune response), central nervous system (see acute inhalation).
Ingestion: Prolonged or repeated ingestion may affect the kidneys and liver, spleen, behavior/central nervous system (muscle weakness).
Skin: Repeated or prolonged skin contact may cause defatting dermatitis with thickening and cracking of skin.

Section 12. Ecological Information

Ecotoxicity
Not available.

BOD5 and COD
Not available.

Products of Biodegradation
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation
The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation
Not available.

Section 13. Disposal Considerations

Waste Disposal
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification
CLASS 6.1: Poisonous material.

Identification
UNNA: 1846: Carbon Tetrachloride PG: II

Special Provisions for Transport
Marine Pollutant

DOT (Pictograms)

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Carbon tetrachloride
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Carbon tetrachloride
New York release reporting list: Carbon tetrachloride
Pennsylvania RTK: Carbon tetrachloride
Minnesota: Carbon tetrachloride
Massachusetts RTK: Carbon tetrachloride
Massachusetts spill list: Carbon tetrachloride
New Jersey: Carbon tetrachloride

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Carbon tetrachloride

New Jersey spill list: Carbon tetrachloride
Louisiana spill reporting: Carbon tetrachloride
California Director’s List of Hazardous Substances: Carbon tetrachloride
TSCA 8(b) inventory: Carbon tetrachloride
SARA 313 toxic chemical notification and release reporting: Carbon tetrachloride
CERCLA: Hazardous substances: Carbon tetrachloride: 10 lbs. (4.536 kg)

California Prop. 65
Warnings
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 200-262-8).
Canada: Listed on Canadian Domestic Substance List (DSL).
China: Listed on National Inventory.
Japan: Listed on National Inventory (ENCS).
Korea: Listed on National Inventory (KECI).
Philippines: Listed on National Inventory (PICCS).
Australia: Listed on AICS.

Other Classifications

WHMIS (Canada)  CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).
CLASS D-2A: Material causing other toxic effects (VERY TOXIC).
CLASS D-2B: Material causing other toxic effects (TOXIC).

R48/23- Toxic: danger of serious damage to health by prolonged exposure through inhalation.
R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R59- Dangerous for the ozone layer.
R23/24/25- Toxic by inhalation, in contact with skin and if swallowed.

HMIS (U.S.A.)

| Health Hazard | 2 |
| Fire Hazard | 0 |
| Reactivity | 0 |
| Personal Protection | h |

National Fire Protection Association (U.S.A.)

| Flammability | 0 |
| Reactivity | 0 |

S23- Do not breathe gas/fumes/vapour/spray [***]
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S59- Refer to manufacturer/supplier for information on recovery/recycling.
S61- Avoid release to the environment. Refer to special instructions/Safety data sheets.

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Protective Equipment

- Gloves.
- Lab coat.
- Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
- Splash goggles.

Major Uses: in formulation of petrol additives; refrigerants; metal degreasing; agricultural fumigant, chlorinating organ compounds; production of semiconductors; solvent for rubber cement; cleaning agent for machinery and electrical equipment; in organic synthesis for chlorination of organic compounds.

Note: Depletes the Ozone layer.

Section 16. Other Information

<table>
<thead>
<tr>
<th>MSDS Code</th>
<th>C3600</th>
</tr>
</thead>
<tbody>
<tr>
<td>References</td>
<td>Not available.</td>
</tr>
<tr>
<td>Other Special Considerations</td>
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</tr>
</tbody>
</table>


CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.