

SAFETY DATA SHEET

Version 6.5
Revision Date 07.01.2022
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : Carbon tetrachloride
Product Number : 289116
Brand : Sigma-Aldrich
Index-No. : 602-008-00-5
CAS-No. : 56-23-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : MilliporeSigma Canada Ltd
2149 WINSTON PARK DRIVE
OAKVILLE ON L6H 6J8
CANADA
Telephone : +1 905 829-9500
Fax : +1 905 829-9292

1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA)
+1-703-527-3887 CHEMTREC
(International)
24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with Hazardous Products Regulations (HPR) (SOR/2015-17)

Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 3), H331
Acute toxicity, Dermal (Category 3), H311
Skin sensitization (Sub-category 1B), H317
Carcinogenicity (Category 2), H351
Specific target organ toxicity - repeated exposure, Inhalation (Category 1), Liver, Kidney, H372
Short-term (acute) aquatic hazard (Category 3), H402
Long-term (chronic) aquatic hazard (Category 3), H412
Hazardous to the ozone layer (Category 1), H420

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H301 + H311 + H331

H317

H351

H372

H412

H420

Toxic if swallowed, in contact with skin or if inhaled.

May cause an allergic skin reaction.

Suspected of causing cancer.

Causes damage to organs (Liver, Kidney) through prolonged or repeated exposure if inhaled.

Harmful to aquatic life with long lasting effects.

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

Precautionary statement(s)

P201

P202

P260

P264

P270

P271

P272

P273

P280

P301 + P310 + P330

P302 + P352 + P312

P304 + P340 + P311

P308 + P313

P333 + P313

P361 + P364

P403 + P233

P405

P501

P502

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.

Wash skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing should not be allowed out of the workplace.

Avoid release to the environment.

Wear protective gloves/ protective clothing/ eye protection/ face protection.

IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.

IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/ doctor if you feel unwell.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor.

IF exposed or concerned: Get medical advice/ attention.

If skin irritation or rash occurs: Get medical advice/ attention.

Take off immediately all contaminated clothing and wash it before reuse.

Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Dispose of contents/ container to an approved waste disposal plant.

Refer to manufacturer or supplier for information on recovery or recycling.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Rapidly absorbed through skin.

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms

: Tetrachloromethane

Sigma-Aldrich - 289116

Page 2 of 11

Formula : CCl₄
Molecular weight : 153.82 g/mol
CAS-No. : 56-23-5
EC-No. : 200-262-8
Index-No. : 602-008-00-5

Component	Classification	Concentration *
Carbon tetrachloride		
	Acute Tox. 3; Skin Sens. 1B; Carc. 2; STOT RE 1; Aquatic Acute 3; Aquatic Chronic 3; Ozone 1; H301, H331, H311, H317, H351, H372, H402, H412, H420 Concentration limits: >= 1 %: STOT RE 1, H372; 0.2 - < 1 %: STOT RE 2, H373;	<= 100 %
* Weight %		

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Carbon oxides

Hydrogen chloride gas

Not combustible.

Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Storage class

Storage class (TRGS 510): 6.1B: Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Carbon tetrachloride	56-23-5	TWA	5 ppm 31 mg/m ³	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Remarks	Suspected Human Carcinogen (means that the human data are accepted as adequate in quality but are conflicting or insufficient to classify the agent as A1) Substance may be readily absorbed through intact skin			
		STEL	10 ppm 63 mg/m ³	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
	Suspected Human Carcinogen (means that the human data are accepted as adequate in quality but are conflicting or insufficient to classify the agent as A1) Substance may be readily absorbed through intact skin			
		TWA	2 ppm	Canada. British Columbia OEL
	IARC '2B' applies to substances deemed possibly carcinogenic to humans. ACGIH 'A2' applies to those substances that are considered suspected human carcinogens. Contributes significantly to the overall exposure by the skin route.			
		TWA	2 ppm	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
	Skin			

		STEL	3 ppm	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
	Skin			
		TWAEV	5 ppm 31 mg/m ³	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
	Skin (percutaneous) Carcinogenic effect suspected in humans			
		STEV	10 ppm 63 mg/m ³	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
	Skin (percutaneous) Carcinogenic effect suspected in humans			
		TWA	5 ppm	USA. ACGIH Threshold Limit Values (TLV)
		STEL	10 ppm	USA. ACGIH Threshold Limit Values (TLV)

8.2 Exposure controls

Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact

Material: Viton®

Minimum layer thickness: 0.7 mm

Break through time: 480 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other

substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: 240 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

Body Protection

protective clothing

Respiratory protection

required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|---|---|
| a) Appearance | Form: liquid
Color: colorless |
| b) Odor | sweet |
| c) Odor Threshold | No data available |
| d) pH | No data available |
| e) Melting point/freezing point | Melting point/range: -23 °C (-9 °F) - lit. |
| f) Initial boiling point and boiling range | 76 - 77 °C 169 - 171 °F - lit. |
| g) Flash point | ()No data available |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapor pressure | 45 hPa at 0.3 °C (32.5 °F)
120 hPa at 19.8 °C(67.6 °F)
14,549 hPa at 24 °C(75 °F) |
| l) Vapor density | No data available |
| m) Density | 1.594 g/cm ³ at 25 °C (77 °F) - lit. |
| Relative density | No data available |
| n) Water solubility | 0.8461 g/l at 20 °C (68 °F) |
| o) Partition coefficient: | log Pow: 2.83 at 25 °C (77 °F) |

Sigma-Aldrich - 289116

Page 7 of 11

	n-octanol/water	
p)	Autoignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	none

9.2 Other safety information

Surface tension	26.7 mN/m at 20 °C (68 °F)
	19.5 mN/m at 80 °C (176 °F)

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Risk of explosion with:

Alkali metals
 powdered aluminium
 Barium
 Boranes
 calcium silicide
 halogen-halogen compounds
 peroxi compounds
 Fluorine
 powdered magnesium
 Powdered metals
 sodium amide
 silanes
 silver perchlorate
 nitrogen dioxide
 alkenes
 Oxygen
 (as liquefied gas)
 Oxygen
 with
 alkali hydroxides
 calcium hypochlorite
 with
 heat
 Violent reactions possible with:
 Alkaline earth metals
 Dimethylformamide
 aluminium chloride
 with

Sigma-Aldrich - 289116

Page 8 of 11

triethylaluminium

10.4 Conditions to avoid

no information available

10.5 Incompatible materials

various plastics, Light metals, metal alloys, Metals

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 2,350 mg/kg

Remarks: (RTECS)

LC50 Inhalation - Rat - 4 h - 8000 ppm - vapor

LD50 Dermal - Rabbit - > 20,000 mg/kg

No data available

Skin corrosion/irritation

Skin - Rabbit

Result: Mild skin irritation - 24 h

(Draize Test)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Mild eye irritation - 24 h

(Draize Test)

Respiratory or skin sensitization

- Mouse

Result: The product is a skin sensitizer, sub-category 1B.

(OECD Test Guideline 429)

Germ cell mutagenicity

No data available

Carcinogenicity

Suspected of causing cancer.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Inhalation - Causes damage to organs through prolonged or repeated exposure. - Liver, Kidney

Aspiration hazard

No data available

11.2 Additional Information

RTECS: FG4900000

Sigma-Aldrich - 289116

Page 9 of 11

Vomiting, Diarrhea, Abdominal pain, Nausea, Dizziness, Headache, Damage to the eyes., Liver injury may occur., Kidney injury may occur., Exposure to and/or consumption of alcohol may increase toxic effects., Contact with skin can cause:, Pain, Erythema, hyperemia

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	mortality LC50 - Danio rerio (zebra fish) - 24.3 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50 - Daphnia magna (Water flea) - 35 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	Growth inhibition EC50 - Algae - 20 mg/l - 72 h (OECD Test Guideline 201)

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

Bioaccumulation Lepomis macrochirus (Bluegill) - 21 d
- 52.3 µg/l (Carbon tetrachloride)

Bioconcentration factor (BCF): 30

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information**TDG**

UN number: 1846 Class: 6.1 Packing group: II
Proper shipping name: CARBON TETRACHLORIDE
Labels: 6.1
ERG Code: 151
Marine pollutant: no

IMDG

UN number: 1846 Class: 6.1 Packing group: II EMS-No: F-A, S-A
Proper shipping name: CARBON TETRACHLORIDE
Marine pollutant : yes

IATA

UN number: 1846 Class: 6.1 Packing group: II
Proper shipping name: Carbon tetrachloride

SECTION 15: Regulatory information

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

SECTION 16: Other information**Further information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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