CATO Research Chemicals Inc.
3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou
Web: www.cato-chem.com
Tel: +86-20-81960175 Fax: +86-20-81717260 E-mail: info@cato-chem.com

SAFETY DATA SHEETS

According to the UN GHS revision 10

Version: 1.1
Creation Date: July 15, 2024
Revision Date: January 04, 2025

SECTION 1: Identification

1.1 GHS Product identifier

Product name Tetrachloromethane

1.2 Other means of identification

Product number CCHM700595
Other names tert-butyl N-acetate; tetrachloro-methane; 1,1-Dimethyl acetate

1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.
Uses advised against no data available

1.4 Supplier's details

Company CATO Research Chemicals Inc.
Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou
Telephone +86-20-81960175

1.5 Emergency phone number

Emergency phone number +86-20-81960175
Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Acute toxicity - Category 3, Oral
Acute toxicity - Category 3, Dermal
Acute toxicity - Category 3, Inhalation
Carcinogenicity, Category 2
Specific target organ toxicity – repeated exposure, Category 1
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 3
Hazardous to the ozone layer, Category 1

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word Danger
Hazard statement(s)
H301 Toxic if swallowed
H311 Toxic in contact with skin
H331 Toxic if inhaled
H351 Suspected of causing cancer
H372 Causes damage to organs through prolonged or repeated exposure
H412 Harmful to aquatic life with long lasting effects
H420 Harms public health and the environment by destroying ozone in the upper atmosphere

Precautionary statement(s)
Prevention
P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P203 Obtain, read and follow all safety instructions before use.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.

Response	P301+P316 IF SWALLOWED: Get emergency medical help immediately. P321 Specific treatment (see ... on this label). P330 Rinse mouth. P302+P352 IF ON SKIN: Wash with plenty of water/... P316 Get emergency medical help immediately. P361+P364 Take off immediately all contaminated clothing and wash it before reuse. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P318 IF exposed or concerned, get medical advice. P319 Get medical help if you feel unwell.
Storage	P405 Store locked up. P403+P233 Store in a well-ventilated place. Keep container tightly closed.
Disposal	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. P502 Refer to manufacturer or supplier for information on recovery or recycling

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Tetrachloromethane	Carbon tetrachloride	56-23-5	200-262-8	≈ 99%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Give one or two glasses of water to drink. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

Dizziness, incoordination, anesthesia; may be accompanied by nausea and liver damage. Kidney damage also occurs, often producing decrease or stopping of urinary output. (USCG, 1999)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Irrigate eyes with water. Wash contaminated areas of body with soap and water. Gastric lavage, if swallowed, followed by saline catharsis. Oxygen and artificial respiration.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

When fighting a fire in which carbon tetrachloride is involved, wear self-contained breathing apparatus.

5.2 Specific hazards arising from the chemical

Special Hazards of Combustion Products: Forms poisonous phosgene gas when exposed to open flames. Behavior in Fire: Decomposes to form chlorine and phosgene (USCG, 1999)

5.3 Special protective actions for fire-fighters

In case of fire in the surroundings, use appropriate extinguishing media. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in covered containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the

environment. Collect leaking and spilled liquid in covered containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.3 Methods and materials for containment and cleaning up

1. ventilate area of spill or leak. 2. collect for reclamation or absorb in vermiculite, dry sand, earth, or a similar material.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Separated from food and feedstuffs and metals. See Chemical Dangers. Ventilation along the floor. Cool.Store in a cool, dry, well-ventilated location. Separate from alkali metals.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 5 ppm as TWA; 10 ppm as STEL; (skin); A2 (suspected human carcinogen).MAK: 3.2 mg/m3, 0.5 ppm; peak limitation category: II(2); skin absorption (H); carcinogen category: 4; pregnancy risk group: C.EU-OEL: 6.4 mg/m3, 1 ppm as TWA; 32 mg/m3, 5 ppm as STEL; (skin)

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Carbon tetrachloride is a clear colorless liquid with a characteristic odor. Denser than water (13.2 lb / gal) and insoluble in water. Noncombustible. May cause illness by inhalation, skin absorption and/or ingestion. Used as a solvent, in the manufacture of other chemicals, as an agricultural fumigant, and for many other uses.
Colour	Colorless, clear, heavy liquid
Odour	SWEETISH, AROMATIC, MODERATELY STRONG ETHEREAL; SOMEWHAT RESEMBLING THAT OF CHLOROFORM
Melting point/freezing point	-23°C
Boiling point or initial boiling point and boiling range	76°C
Flammability	Noncombustible Liquid
Lower and upper explosion limit/flammability limit	no data available
Flash point	Use any means suitable for fire extinguisher
Auto-ignition temperature	Not flammable (USCG, 1999)
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	2.03X10-3 Pa.s @ 250.00 K
Solubility	less than 1 mg/mL at 70° F (NTP, 1992)
Partition coefficient n-octanol/water	log Kow= 2.83
Vapour pressure	4.05 psi (20 °C)

Density and/or relative density	1.594
Relative vapour density	5.32 (vs air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

NIOSH has recommended that carbon tetrachloride be treated as a potential human carcinogen.
Decomposes on contact with hot surfaces or flames. This produces toxic and corrosive fumes of hydrogen chloride (see ICSC 0163), chlorine (see ICSC 0126) and phosgene (see ICSC 0007). Reacts with some metals such as aluminium, magnesium and zinc some metals such as aluminium, magnesium and zinc. This generates fire and explosion hazard.

10.2 Chemical stability

Generally inert ...

10.3 Possibility of hazardous reactions

Not flammableThe vapour is heavier than air.CARBON TETRACHLORIDE is a commonly used liquid in fire extinguishers to combat small fires. It has no flash point, it is not flammable. However, when heated to decomposition, it will emit fumes of extremely toxic phosgene and of hydrogen chloride. Forms explosive mixtures with chlorine trifluoride, calcium hypochlorite, decaborane, dinitrogen tetraoxide, fluorine. Forms impact-sensitive explosive mixtures with particles of many metals: lithium, sodium, potassium, beryllium, zinc, aluminum, barium. Vigorous exothermic reaction with allyl alcohol, boron trifluoride, diborane, disilane, aluminum chloride, dibenzoyl peroxide, potassium tert-butoxide, liquid oxygen, zirconium. [Bretherick, 5th ed., 1995, p. 666]. Potentially dangerous reaction with dimethylformamide or dimethylacetamide in presence of iron [Cardillo, P. et al., Ann. Chim. (Rome), 1984, 74, p. 129].

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

A paste of zinc powder and carbon tetrachloride (with kieselguhr as thickener) will readily burn after ignition by a high-temperature primer.

10.6 Hazardous decomposition products

Decomposes to form chlorine and phosgene.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 2920 mg/kg
- Inhalation: no data available
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

NTP: Reasonably anticipated to be a human carcinogen

Reproductive toxicity

No information is available on the reproductive effects of carbon tetrachloride in humans. Limited epidemiological data have indicated a possible association between certain birth outcomes (e.g., birth weight, cleft palate) and drinking water exposure. However, as the water contained multiple chemicals, the role of carbon tetrachloride is unclear. Decreased fertility and degenerative changes in the testes have been observed in animals exposed to carbon tetrachloride by inhalation. Birth defects have not been observed in animals exposed to carbon tetrachloride by inhalation or ingestion.

STOT-single exposure

The substance is irritating to the eyes. The substance may cause effects on the liver, kidneys and central nervous system. This may result in unconsciousness. Medical observation is indicated.

STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis. This substance is possibly carcinogenic to humans.

Aspiration hazard

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50 Lepomis macrochirus (Bluegill) 125,000 ug/l/96 hr (static unmeasured)
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: The static screening flask test method measured >87% degradation of carbon tetrachloride in 7 days in the original test, and 100% degradation in the second, third, and fourth trials(1). In a standard dilution test, 0% Theoretical BOD for carbon tetrachloride was measured(2).

12.3 Bioaccumulative potential

A BCF of 3.2-7.4 for carbon tetrachloride was measured(1). A measured BCF value for trout, rainbow trout and bluegill sunfish was found to be 17.37(2,3), 52.48(5), and 30.2(4) and 26.3(5), respectively. According to a classification scheme(6), these BCF values suggest the potential for bioconcentration in aquatic organisms is low.

12.4 Mobility in soil

The Koc for carbon tetrachloride was measured to be 71(1). According to a classification scheme(4), this Koc value suggests that carbon tetrachloride is expected to have high mobility in soil. Estimated retardation factor in breakthrough sampling in groundwater - 1.44-1.8(2,3).

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID	IMDG	IATA
UN1846 (For reference only, please check.)	UN1846 (For reference only, please check.)	UN1846 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID	IMDG	IATA
CARBON TETRACHLORIDE (For reference only, please check.)	CARBON TETRACHLORIDE (For reference only, please check.)	CARBON TETRACHLORIDE (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID	IMDG	IATA
6.1 (For reference only, please check.)	6.1 (For reference only, please check.)	6.1 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID	IMDG	IATA
II (For reference only, please check.)	II (For reference only, please check.)	II (For reference only, please check.)

14.5 Environmental hazards

ADR/RID	IMDG	IATA
No	No	No

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Carbon tetrachloride	Carbon tetrachloride	56-23-5	200-262-8
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

Creation Date	July 15, 2024
Revision Date	January 04, 2025

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
- HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm
- IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple
- ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg
- Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp
- ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Other Information

Use of alcoholic beverages enhances the harmful effect.Depending on the degree of exposure, periodic medical examination is suggested.The odour warning when the exposure limit value is exceeded is insufficient.Do NOT use in the vicinity of a fire or a hot surface, or during welding.

Any questions regarding this SDS, Please send your inquiry to info@cato-chem.com

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