• SAFETY DATA SHEET

Version 8.0
Revision Date 03/16/2026
Print Date 03/17/2026

SECTION 1. IDENTIFICATION

1.1 Product identifiers

Product name : Carbon-^{13}C tetrachloride

Product Number : 488488
Brand : Aldrich
CAS-No. : 32488-50-9

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

Identified uses : Laboratory chemicals, Synthesis of substances

Uses advised against : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone number

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

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazards for the product as supplied

Acute toxicity (Oral) : Category 3

Acute toxicity (Inhalation)	:	Category 3
Acute toxicity (Dermal)	:	Category 3
Carcinogenicity	:	Category 2
Specific target organ toxicity - repeated exposure (Inhalation)	:	Category 1
Short-term (acute) aquatic hazard	:	Category 3
Long-term (chronic) aquatic hazard	:	Category 3
Hazardous to the ozone layer	:	Category 1

Other hazards

None known.

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H301 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled.
H351 Suspected of causing cancer.
H372 Causes damage to organs through prolonged or repeated exposure if inhaled.
H412 Harmful to aquatic life with long lasting effects.
H420 Harms public health and the environment by destroying ozone in the upper atmosphere.

Precautionary statements : **Prevention:**

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe mist or vapours.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye

protection/ face protection.

Response:

P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.
P302 + P352 + P312 IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/ doctor if you feel unwell.
P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P361 + P364 Take off immediately all contaminated clothing and wash it before reuse.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.
P502 Refer to manufacturer or supplier for information on recovery or recycling.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

CAS-No. : 32488-50-9

Components

Chemical name	CAS No./Unique ID	Concentration (% w/w)	Trade secret
Carbon-13C tetrachloride	32488-50-9*	>= 80 - <= 100	TSC

* Indicates that the identifier is a CAS No.
TSC- the actual concentration or concentration range is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : First aiders need to protect themselves.
Show this 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.
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
Protection of first-aiders	:	For personal protection see section 8.
Notes to physician	:	No data available

SECTION 5. FIREFIGHTING MEASURES

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.
Specific hazards during fire fighting	:	Not combustible. Ambient fire may liberate hazardous vapours.
Hazardous combustion products	:	Carbon oxides Hydrogen chloride gas
Specific extinguishing methods	:	No data available

Further information	:	Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for fire-fighters	:	Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: For personal protection see section 8.
Environmental precautions	:	Do not let product enter drains.
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. Chemizorb®). Dispose of properly. Clean up affected area.

SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

Advice on safe handling	:	Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.
Further information on storage conditions	:	Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.
Storage class	:	6.1B, Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials
Recommended storage	:	Recommended storage temperature see product label.

temperature

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Carbon-13C tetrachloride	32488-50-9	TWA	5 ppm	ACGIH
		STEL	10 ppm	ACGIH
		ST	2 ppm 12.6 mg/m3	NIOSH REL
		TWA	10 ppm	OSHA Z-2
		CEIL	25 ppm	OSHA Z-2
		Peak	200 ppm (5 mins. in any 4 hrs.)	OSHA Z-2
		ECEL-TWA (Inhalation exposure)	0.03 ppm 0.2 mg/m3	TSCA ECEL

Engineering measures : No data available

Personal protective equipment

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.

Recommended Filter type: : Filter type ABEK

The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Hand protection

Material	:	Nitrile rubber
Break through time	:	10 min
Glove thickness	:	0.11 mm
Protective index	:	Splash contact
Manufacturer	:	Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Material	:	Viton®
Break through time	:	480 min
Glove thickness	:	0.7 mm
Protective index	:	Full contact
Manufacturer	:	KCL 890 Vitoject®
Remarks	:	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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Eye protection	:	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses
Skin and body protection	:	protective clothing
Hygiene measures	:	Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	No data available
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	No data available
Melting point/ range	:	-9 °F / -23 °C Method: lit.
Boiling point/boiling range	:	169 - 171 °F / 76 - 77 °C Method: lit.
Flash point	:	No data available
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Flammability (liquids)	:	The product is not flammable.

Burning rate	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	14,549 Pa (75.18 °F / 23.99 °C)
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	1.604 g/mL (77 °F / 25 °C) Method: lit. 1.604 g/cm3 (77 °F / 25 °C) Method: lit.
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	log Pow: 5.0
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Flow time	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Molecular weight	:	154.82 g/mol
Particle characteristics Particle size	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No data available

Chemical stability	:	The product is chemically stable under standard ambient conditions (room temperature) .
Possibility of hazardous reactions	:	No data available
Conditions to avoid	:	no information available
Incompatible materials	:	Strong oxidizing agents
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 - 100.0 mg/kg
Oral: No data available
LC50 Inhalation - 4.0 h - 3.0 mg/l - vapour

Inhalation: No data available
LD50 Dermal - 300.0 mg/kg
Dermal: No data available

Skin corrosion/irritation
Remarks: No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
Limited evidence of carcinogenicity in animal studies

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Carbon-13C tetrachloride)
NTP:	RAHC - Reasonably anticipated to be a human carcinogen (Carbon-13C tetrachloride)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

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.

Aspiration hazard
No data available

11.2 Additional Information

Vomiting, Diarrhoea, 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.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Carbon-13C tetrachloride:

Toxicity to fish	:	LC50 : 19.0 mg/l Exposure time: 96.0 h Remarks: No data available

Persistence and degradability

Components:

Carbon-13C tetrachloride:

Biodegradability	:	Remarks: No data available

Bioaccumulative potential

Components:

Carbon-13C tetrachloride:

Bioaccumulation	:	Remarks: No data available
Partition coefficient: n-octanol/water	:	log Pow: 5.0

Mobility in soil

Components:

Carbon-13C tetrachloride:

Stability in soil	:	Remarks: No data available

Other adverse effects

Product:

Ozone-Depletion Potential	:	Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Warning: Manufactured with Carbon-13C tetrachloride, a substance which harms public health and environment by destroying ozone in the upper atmosphere.

Components:

Carbon-13C tetrachloride:

Ozone-Depletion Potential	:	1.1 Regulation: UNEP - Handbook for the Montreal Protocol on Substances that Deplete the Ozone Layer (Update: 2020-01-01) Group: Annex B - Group II: Carbon tetrachloride 1.1 Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances (Update: 2007-07-01) Group: Group IV

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	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.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 1846
Proper shipping name	:	Carbon tetrachloride
Class	:	6.1
Packing group	:	II
Labels	:	Division 6.1 - Toxic substances
Packing instruction (cargo aircraft)	:	661
Packing instruction (passenger aircraft)	:	654

IMDG-Code

UN number	:	UN 1846
Proper shipping name	:	CARBON TETRACHLORIDE

Class	:	6.1
Packing group	:	II
Labels	:	6.1
EmS Code	:	F-A, S-A
Marine pollutant	:	yes

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

National Regulations

49 CFR Road

UN/ID/NA number	:	UN 1846
Proper shipping name	:	Carbon tetrachloride
Class	:	6.1
Packing group	:	II
Labels	:	Division 6.1 - Toxic substances
ERG Code	:	151
Marine pollutant	:	yes
Poison Inhalation Hazard	:	No

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Carbon-13C tetrachloride	32488-50-9	10	10
Carbon-13C tetrachloride	32488-50-9	10	10 (D019)
Carbon-13C tetrachloride	32488-50-9	10	10 (F001)

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards	:	Acute Health Hazard Chronic Health Hazard
SARA 313	:	The following components are subject to reporting levels established by SARA Title III, Section 313:

Carbon-13C tetrachloride	32488-50-9	>= 90 - <= 100 %

Clean Air Act

Warning: Manufactured with Carbon-13C tetrachloride, a substance which harms public health and environment by destroying ozone in the upper atmosphere.

UNEP - Handbook for the Montreal Protocol on Substances that Deplete the Ozone LayerOzone-Depletion Potential	:	carbon tetrachloride	32488-50-9
40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I SubstancesOzone-Depletion Potential	:	Carbon Tetrachloride	32488-50-9

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

Carbon-13C tetrachloride	32488-50-9	>= 90 - <= 100 %

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

Carbon-13C tetrachloride	32488-50-9	>= 90 - <= 100 %

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Carbon-13C tetrachloride	32488-50-9	>= 90 - <= 100 %

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Carbon-13C tetrachloride	32488-50-9	>= 90 - <= 100 %

This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

Carbon-13C tetrachloride	32488-50-9	>= 90 - <= 100 %

This product contains the following priority pollutants related to the U.S. Clean Water Act:

Carbon-13C tetrachloride	32488-50-9	>= 90 - <= 100 %

US State Regulations

Massachusetts Right To Know

Carbon-13C tetrachloride	32488-50-9

Pennsylvania Right To Know

Carbon-13C tetrachloride	32488-50-9

Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

Product does not contain any listed chemicals

Washington Chemicals of High Concern

Product does not contain any listed chemicals

California Prop. 65

WARNING: This product can expose you to chemicals including Carbon-13C tetrachloride, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

International Regulations

Montreal Protocol : Carbon-13C tetrachloride

The components of this product are reported in the following inventories:

US TSCA : Product contains substance(s) not listed on TSCA inventory.

TSCA list

No substances are subject to a Significant New Use Rule.

The following substance(s) is/are subject to TSCA 12(b) export notification requirements:
Carbon-13C tetrachloride 32488-50-9

SECTION 16. OTHER INFORMATION

Relevant changes since previous version

8. Exposure controls/personal protection

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA Z-2	:	USA. Occupational Exposure Limits (OSHA) - Table Z-2
TSCA ECEL	:	TSCA Existing Chemical Exposure Limit
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA Z-2 / TWA	:	8-hour time weighted average
OSHA Z-2 / CEIL	:	Acceptable ceiling concentration
OSHA Z-2 / Peak	:	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift
TSCA ECEL / ECEL-TWA	:	Existing Chemical Exposure List (TWA)

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. 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.

Revision Date : 03/16/2026

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact mlsbranding@sial.com.

US / EN