

**SAFETY DATA SHEET**

according to Regulation (EC) No. 1907/2006

Version 6.8

Revision Date 02.01.2025

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GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : 1,1,2,2-Tetrachloroethane

Product Number : 46259

Brand : Sigma-Aldrich

Index-No. : 602-015-00-3

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration or the annual tonnage does not require a registration.

CAS-No. : 79-34-5

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

Identified uses : Laboratory chemicals, Manufacture of substances

**1.3**

CHEMIKART

**1.4 Emergency telephone**

Emergency Phone # : 000 800 1007 141 (CHEMTREC)

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**

|                                                  |                                                        |
|--------------------------------------------------|--------------------------------------------------------|
| Acute toxicity, (Category 2)                     | H330: Fatal if inhaled.                                |
| Acute toxicity, (Category 1)                     | H310: Fatal in contact with skin.                      |
| Long-term (chronic) aquatic hazard, (Category 2) | H411: Toxic to aquatic life with long lasting effects. |

**2.2 Label elements****Labelling according Regulation (EC) No 1272/2008**

Pictogram

|                                |                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Signal Word                    | Danger                                                                                                               |
| Hazard Statements              |                                                                                                                      |
| H310 + H330                    | Fatal in contact with skin or if inhaled.                                                                            |
| H411                           | Toxic to aquatic life with long lasting effects.                                                                     |
| Precautionary Statements       |                                                                                                                      |
| P262                           | Do not get in eyes, on skin, or on clothing.                                                                         |
| P264                           | Wash skin thoroughly after handling.                                                                                 |
| P273                           | Avoid release to the environment.                                                                                    |
| P280                           | Wear protective gloves/ protective clothing.                                                                         |
| P302 + P352 + P310             | IF ON SKIN: Wash with plenty of water. Immediately call a POISON CENTER/ doctor.                                     |
| P304 + P340 + P310             | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor. |
| Supplemental Hazard Statements | none                                                                                                                 |
|                                | For use in industrial installations only.                                                                            |

### Reduced Labeling (<= 125 ml)

#### Pictogram

|                                |                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Signal Word                    | Danger                                                                                                               |
| Hazard Statements              |                                                                                                                      |
| H310 + H330                    | Fatal in contact with skin or if inhaled.                                                                            |
| Precautionary Statements       |                                                                                                                      |
| P262                           | Do not get in eyes, on skin, or on clothing.                                                                         |
| P264                           | Wash skin thoroughly after handling.                                                                                 |
| P280                           | Wear protective gloves/ protective clothing.                                                                         |
| P302 + P352 + P310             | IF ON SKIN: Wash with plenty of water. Immediately call a POISON CENTER/ doctor.                                     |
| P304 + P340 + P310             | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor. |
| Supplemental Hazard Statements | none                                                                                                                 |

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

#### Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

#### Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.  
Rapidly absorbed through skin.

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms : Acetylene tetrachloride

Formula : C<sub>2</sub>H<sub>2</sub>Cl<sub>4</sub>  
Molecular weight : 167,85 g/mol  
CAS-No. : 79-34-5  
EC-No. : 201-197-8  
Index-No. : 602-015-00-3

| Component                        |              | Classification                                                  | Concentration |
|----------------------------------|--------------|-----------------------------------------------------------------|---------------|
| <b>1,1,2,2-tetrachloroethane</b> |              |                                                                 |               |
| CAS-No.                          | 79-34-5      | Acute Tox. 2; Acute Tox. 1; Aquatic Chronic 2; H330, H310, H411 | <= 100 %      |
| EC-No.                           | 201-197-8    |                                                                 |               |
| Index-No.                        | 602-015-00-3 |                                                                 |               |

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

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## 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. Remove contact lenses.

#### If swallowed

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell. Consult a physician.

### 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

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

#### 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

Combustible.

Development of hazardous combustion gases or vapours possible in the event of fire.

## **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.

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## **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.

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## **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 stability** Recommended storage temperature

2 - 8 °C

#### **Storage class**

Storage class (TRGS 510): 6.1A: 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

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## **SECTION 8: Exposure controls/personal protection**

### **8.1 Control parameters**

#### **Ingredients with workplace control parameters**

### **8.2 Exposure controls**

#### **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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: Viton®

Minimum layer thickness: 0,7 mm

Break through time: 480 min

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

##### **Body Protection**

protective clothing

##### **Respiratory protection**

Recommended Filter type: Self-contained breathing apparatus (EN 133)

The entrepreneur 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.

##### **Control of environmental exposure**

Do not let product enter drains.

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## **SECTION 9: Physical and chemical properties**

### **9.1 Information on basic physical and chemical properties**

- |                   |                   |
|-------------------|-------------------|
| a) Physical state | liquid, clear     |
| b) Color          | No data available |

- |                                                 |                                                                                  |
|-------------------------------------------------|----------------------------------------------------------------------------------|
| c) Odor                                         | No data available                                                                |
| d) Melting point/freezing point                 | Melting point/ range: -43 °C - lit.                                              |
| e) Initial boiling point and boiling range      | 147 °C - lit.                                                                    |
| f) Flammability (solid, gas)                    | No data available                                                                |
| g) Upper/lower flammability or explosive limits | No data available                                                                |
| h) Flash point                                  | No data available                                                                |
| i) Autoignition temperature                     | No data available                                                                |
| j) Decomposition temperature                    | No data available                                                                |
| k) pH                                           | No data available                                                                |
| l) Viscosity                                    | Viscosity, kinematic: No data available<br>Viscosity, dynamic: No data available |
| m) Water solubility                             | No data available                                                                |
| n) Partition coefficient: n-octanol/water       | log Pow: 5                                                                       |
| o) Vapor pressure                               | 11 hPa at 20,0 °C                                                                |
| p) Density                                      | 1,586 g/cm <sup>3</sup> at 25 °C - lit.                                          |
| Relative density                                | No data available                                                                |
| q) Relative vapor density                       | No data available                                                                |
| r) Particle characteristics                     | No data available                                                                |
|                                                 |                                                                                  |
| s) Explosive properties                         | Not classified as explosive.                                                     |
| t) Oxidizing properties                         | none                                                                             |

## 9.2 Other safety information

No data available

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## 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 ignition or formation of inflammable gases or vapours with:

Alkali metals

alkali hydroxides

Risk of explosion/exothermic reaction with:

Potassium  
sodium  
Alkaline earth metals  
Exothermic reaction with:  
Powdered metals  
Oxidizing agents

#### **10.4 Conditions to avoid**

no information available

#### **10.5 Incompatible materials**

No data available

#### **10.6 Hazardous decomposition products**

In the event of fire: see section 5

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### **SECTION 11: Toxicological information**

#### **11.1 Information on toxicological effects**

##### **Acute toxicity**

Symptoms: Nausea, Vomiting

Acute toxicity estimate Inhalation - 4 h - 0,501 mg/l - vapor

(Expert judgment)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Symptoms: Cough, Shortness of breath

Acute toxicity estimate Dermal - 5 mg/kg

(Expert judgment)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

##### **Skin corrosion/irritation**

Remarks: Drying-out effect resulting in rough and chapped skin.

##### **Serious eye damage/eye irritation**

Remarks: Lacrimal irritation due to vapours.

Risk of corneal clouding.

##### **Respiratory or skin sensitization**

No data available

##### **Germ cell mutagenicity**

No data available

##### **Carcinogenicity**

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

##### **Reproductive toxicity**

No data available

##### **Specific target organ toxicity - single exposure**

No data available

##### **Specific target organ toxicity - repeated exposure**

No data available

##### **Aspiration hazard**

No data available

## 11.2 Additional Information

### Endocrine disrupting properties

#### Product:

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

RTECS: KI8575000

Headache, Nausea, Vomiting, Tremors, Incoordination., fatigue, Dizziness, Anorexia., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

After absorption:

Headache  
Dizziness  
Drowsiness  
Tiredness  
Cardiac irregularities  
Cyanosis  
inebriation  
Tremors  
ataxia (impaired locomotor coordination)  
Unconsciousness  
Coma  
narcosis  
respiratory arrest  
death

Use of alcoholic beverages may enhance toxic effects.

Absorption can result in damage to:

Liver  
Kidney

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

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## SECTION 12: Ecological information

### 12.1 Toxicity

|                                                     |                                                                                              |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------|
| Toxicity to fish                                    | LC50 - Pimephales promelas (fathead minnow) - 20,3 mg/l - 96 h<br>Remarks: (ECOTOX Database) |
| Toxicity to daphnia and other aquatic invertebrates | EC50 - Daphnia magna (Water flea) - 23 mg/l - 48 h<br>Remarks: (ECOTOX Database)             |



Toxicity to algae      EC50 - Pseudokirchneriella subcapitata (green algae) - 76,9 mg/l - 72 h  
Remarks: (ECOTOX Database)

Toxicity to fish(Chronic toxicity)      LOEC - other fish - 7,23 mg/l - 10 d  
Remarks: (ECOTOX Database)

## 12.2 Persistence and degradability

No data available

## 12.3 Bioaccumulative potential

Bioaccumulation      Lepomis macrochirus (Bluegill) - 14 d  
- 0,00962 mg/l(1,1,2,2-tetrachloroethane)

Bioconcentration factor (BCF): 8

## 12.4 Mobility in soil

No data available

## 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## 12.6 Endocrine disrupting properties

### Product:

Assessment      : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## 12.7 Other adverse effects

Biological effects:

Forms toxic mixtures in water, dilution measures notwithstanding.

Discharge into the environment must be avoided.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

No data available

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## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: 1702

IMDG: 1702

IATA: 1702

### 14.2 UN proper shipping name

ADR/RID: 1,1,2,2-TETRACHLOROETHANE

IMDG: 1,1,2,2-TETRACHLOROETHANE

IATA: 1,1,2,2-Tetrachloroethane

#### 14.3 Transport hazard class(es)

ADR/RID: 6.1

IMDG: 6.1

IATA: 6.1

#### 14.4 Packaging group

ADR/RID: II

IMDG: II

IATA: II

#### 14.5 Environmental hazards

ADR/RID: yes

IMDG Marine pollutant: yes

IATA: no

#### 14.6 Special precautions for user

Tunnel restriction code : (D/E)

Further information : No data available

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### SECTION 15: Regulatory information

#### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

##### Authorisations and/or restrictions on use

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : 1,1,2,2-tetrachloroethane

##### National legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

H1 ACUTE TOXIC

E2 ENVIRONMENTAL HAZARDS

H1 ACUTE TOXIC

E2 ENVIRONMENTAL HAZARDS

##### Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

#### 15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

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### SECTION 16: Other information

#### Full text of H-Statements

H310 Fatal in contact with skin.

H330 Fatal if inhaled.

H411 Toxic to aquatic life with long lasting effects.

## Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; 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; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; 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 Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; 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; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; 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

## Further information

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](http://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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