

## 1 Identification

### Product identifier

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

**Stock number:** A14923

**CAS Number:**

79-34-5

**EC number:**

201-197-8

**Index number:**

602-015-00-3

**Relevant identified uses of the substance or mixture and uses advised against.** No further relevant information available.

**Identified use:** SU24 Scientific research and development

### Details of the supplier of the safety data sheet

#### Manufacturer/Supplier:

Alfa Aesar  
Thermo Fisher Scientific Chemicals, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Tel: 800-343-0660  
Fax: 800-322-4757  
Email: tech@alfa.com  
www.alfa.com

**Information Department:** Health, Safety and Environmental Department

#### Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

## 2 Hazard(s) identification

### Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS06 Skull and crossbones

Acute Tox. 1 H310 Fatal in contact with skin.

Acute Tox. 2 H330 Fatal if inhaled.



GHS08 Health hazard

Muta. 2 H341 Suspected of causing genetic defects.

Carc. 2 H351 Suspected of causing cancer.

**Hazards not otherwise classified** No information known.

### Label elements

**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

### Hazard pictograms



GHS06 GHS08

### Signal word

**Danger**

### Hazard statements

H310+H330 Fatal in contact with skin or if inhaled.

H341 Suspected of causing genetic defects.

H351 Suspected of causing cancer.

### Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P284 [In case of inadequate ventilation] wear respiratory protection.

P201 Obtain special instructions before use.

P320 Specific treatment is urgent (see on this label).

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### WHMIS classification

D1B - Toxic material causing immediate and serious toxic effects

D2A - Very toxic material causing other toxic effects



### Classification system

#### HMIS ratings (scale 0-4)

#### (Hazardous Materials Identification System)

**HEALTH** **3** Health (acute effects) = 3

**FIRE** **0** Flammability = 0

**REACTIVITY** **1** Physical Hazard = 1

### Other hazards

#### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

## 3 Composition/information on ingredients

### Chemical characterization: Substances

#### CAS# Description:

79-34-5 1,1,2,2-Tetrachloroethane

**Concentration:** ≤100%

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

**Identification number(s):**  
**EC number:** 201-197-8  
**Index number:** 602-015-00-3

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**4 First-aid measures**

**Description of first aid measures**  
**General information**  
Immediately remove any clothing soiled by the product.  
Remove breathing apparatus only after contaminated clothing has been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.  
**After inhalation**  
Supply fresh air. If required, provide artificial respiration. Keep patient warm.  
Seek immediate medical advice.  
**After skin contact**  
Immediately wash with water and soap and rinse thoroughly.  
Seek immediate medical advice.  
**After eye contact** Rinse opened eye for several minutes under running water. Then consult a doctor.  
**After swallowing** Seek medical treatment.  
**Information for doctor**  
**Most important symptoms and effects, both acute and delayed**  
Fatal if inhaled.  
Fatal in contact with skin.  
Suspected of causing cancer.  
**Indication of any immediate medical attention and special treatment needed** No further relevant information available.

**5 Fire-fighting measures**

**Extinguishing media**  
**Suitable extinguishing agents** Product is not flammable. Use fire-fighting measures that suit the surrounding fire.  
**Special hazards arising from the substance or mixture**  
If this product is involved in a fire, the following can be released:  
Carbon monoxide and carbon dioxide  
Hydrogen chloride (HCl)  
**Advice for firefighters**  
**Protective equipment:**  
Wear self-contained respirator.  
Wear fully protective impervious suit.

**6 Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.  
**Ensure adequate ventilation**  
**Environmental precautions:** Do not allow material to be released to the environment without proper governmental permits.  
**Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose of contaminated material as waste according to section 13.  
**Ensure adequate ventilation.**  
**Prevention of secondary hazards:** No special measures required.  
**Reference to other sections**  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.  
**Protective Action Criteria for Chemicals**  
**PAC-1:** 3 ppm  
**PAC-2:** 120 ppm  
**PAC-3:** 150 ppm

**7 Handling and storage**

**Handling**  
**Precautions for safe handling**  
Keep container tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation at the workplace.  
Open and handle container with care.  
**Information about protection against explosions and fires:** The product is not flammable  
**Conditions for safe storage, including any incompatibilities**  
**Storage**  
**Requirements to be met by storerooms and receptacles:** No special requirements.  
**Information about storage in one common storage facility:**  
Store away from strong bases.  
Store away from oxidizing agents.  
**Further information about storage conditions:**  
Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.  
**Specific end use(s)** No further relevant information available.

**8 Exposure controls/personal protection**

**Additional information about design of technical systems:**  
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.  
**Control parameters**

**Components with limit values that require monitoring at the workplace:**  
**79-34-5 1,1,2,2-Tetrachloroethane (100.0%)**

PEL (USA)	Long-term value: 35 mg/m³, 5 ppm Skin
REL (USA)	Long-term value: 7 mg/m³, 1 ppm Skin; See Pocket Guide Apps. A and C

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USA

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

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TLV (USA)	Long-term value: 6.9 mg/m <sup>3</sup> , 1 ppm Skin
EL (Canada)	Long-term value: 1 ppm Skin, IARC 2B
EV (Canada)	Long-term value: 7 mg/m <sup>3</sup> , 1 ppm Skin

**Additional information:** No data

**Exposure controls**

**Personal protective equipment**

**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.  
Keep away from foodstuffs, beverages and feed.  
Remove all soiled and contaminated clothing immediately.  
Wash hands before breaks and at the end of work.  
Store protective clothing separately.  
Avoid contact with the eyes and skin.  
Maintain an ergonomically appropriate working environment.

**Breathing equipment:** Use self-contained respiratory protective device in emergency situations.

**Recommended filter device for short term use:**  
Use a respirator with multi-purpose combination (US) or type ABEK (EN 14387) as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards such as NIOSH (USA) or CEN (EU).

**Protection of hands:**  
Impervious gloves  
Check protective gloves prior to each use for their proper condition.  
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

**Material of gloves** Fluorocarbon rubber (Viton)

**Penetration time of glove material (in minutes)** Not determined

**Eye protection:** Safety glasses with side shields / NIOSH (US) or EN 166(EU)

**Body protection:** Protective work clothing.

**9 Physical and chemical properties**

<b>Information on basic physical and chemical properties</b>	
<b>General Information</b>	
<b>Appearance:</b>	
Form:	Liquid
Odor:	Not determined
Odor threshold:	Not determined.
<b>pH-value:</b>	Not determined.
<b>Change in condition</b>	
Melting point/Melting range:	-43 °C (-45 °F)
Boiling point/Boiling range:	142-146 °C (288-295 °F)
Sublimation temperature / start:	Not determined
Flammability (solid, gaseous)	Not applicable.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Auto igniting:	Not determined.
<b>Danger of explosion:</b>	Not determined.
<b>Explosion limits:</b>	
Lower:	Not determined
Upper:	Not determined
Vapor pressure at 20 °C (68 °F):	7 hPa (5 mm Hg)
Density at 20 °C (68 °F):	1.596 g/cm <sup>3</sup> (13.319 lbs/gal)
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
<b>Solubility in / Miscibility with</b>	
Water:	Slightly soluble
<b>Partition coefficient (n-octanol/water):</b>	Not determined.
<b>Viscosity:</b>	
dynamic:	Not determined.
kinematic:	Not determined.
<b>Other information</b>	No further relevant information available.

**10 Stability and reactivity**

**Reactivity** No information known.

**Chemical stability** Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:** Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions** Reacts with strong oxidizing agents

**Conditions to avoid** No further relevant information available.

**Incompatible materials:**  
Bases  
Oxidizing agents

**Hazardous decomposition products:**  
Carbon monoxide and carbon dioxide  
Hydrogen chloride (HCl)

**11 Toxicological information**

**Information on toxicological effects**

**Acute toxicity:**  
Fatal if inhaled.  
Fatal in contact with skin.  
Danger through skin absorption.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

<b>LD/LC50 values that are relevant for classification:</b>		
Oral	LD50	200 mg/kg (rat)

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USA

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Dermal	LD50	3990 mg/kg (rabbit)
Inhalative	LC50/4H	8600 mg/m <sup>3</sup> /4H (rat)
	LC50/8H	4500 mg/m <sup>3</sup> /8H (mouse)
	LC50/2H	4500 mg/m <sup>3</sup> /2H (mouse)

**Reproductive toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for this substance.

**Specific target organ system toxicity - repeated exposure:** No effects known.

**Specific target organ system toxicity - single exposure:** No effects known.

**Aspiration hazard:** No effects known.

**Subacute to chronic toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

**Other adverse effects** No further relevant information available.

**Uncleaned packaging:**  
**Recommendation:** Disposal must be made according to official regulations.

## UN1702

Transport hazard class(es)

DOT



**Class  
Label  
ADR**

### 6.1 Toxic substances



**Class  
Label  
IMDG**


### 6.1 (T1) Toxic substances



## Class

### 6.1 Toxic substances

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<b>Product name: 1,1,2,2-Tetrachloroethane</b>	
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<b>Label IATA</b> 	6.1
<b>Class Label</b>	6.1 Toxic substances 6.1
<b>Packing group DOT, ADR, IMDG</b>	II
<b>Environmental hazards: Marine pollutant (IMDG):</b>	Yes (P) Symbol (fish and tree)
<b>Special precautions for user</b> <b>EMS Number:</b> <b>Segregation groups</b> <b>Storage Category</b> <b>Storage Code</b>	Warning: Toxic substances F-A,S-A Liquid halogenated hydrocarbons A SW2 Clear of living quarters.
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> Not applicable.	
<b>Transport/Additional information:</b>	
<b>DOT</b> <b>Quantity limitations</b>	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L 100 lbs, 45.4 kg
<b>Hazardous substance: Marine Pollutant (DOT):</b> <b>Remarks:</b>	Yes (P) Special marking with the symbol (fish and tree).
<b>IMDG</b> <b>Limited quantities (LQ)</b> <b>Excepted quantities (EQ)</b>	100 ml Code: E4 Maximum net quantity per inner packaging: 1 ml Maximum net quantity per outer packaging: 500 ml
<b>UN "Model Regulation":</b>	UN 1702 , 1,2,2-TETRACHLOROETHANE, 6.1, II

**15 Regulatory information**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**  
**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)  
**Hazard pictograms**



GHS06 GHS08

**Signal word** Danger

**Hazard statements**

H310+H330 Fatal in contact with skin or if inhaled.  
H341 Suspected of causing genetic defects.  
H351 Suspected of causing cancer.

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapors/spray.  
P284 [In case of inadequate ventilation] wear respiratory protection.  
P201 Obtain special instructions before use.  
P320 Specific treatment is urgent (see on this label).  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.  
All components of this product are listed on the Canadian Domestic Substances List (DSL).

**SARA Section 313 (specific toxic chemical listings)**

79-34-5 1,1,2,2-Tetrachloroethane

**California Proposition 65**

**Prop 65 - Chemicals known to cause cancer**

79-34-5 1,1,2,2-Tetrachloroethane

**Prop 65 - Developmental toxicity** Substance is not listed.

**Prop 65 - Developmental toxicity, female** Substance is not listed.

**Prop 65 - Developmental toxicity, male** Substance is not listed.

**Information about limitation of use:** For use only by technically qualified individuals.

**Other regulations, limitations and prohibitive regulations**

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.** Substance is not listed.

**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.**

Substance is not listed.

**Annex XIV of the REACH Regulations (requiring Authorisation for use)** Substance is not listed.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS:** Global Marketing Department

**Date of preparation/Revision:** Print date, revision date and version number are in the header of each page.

**Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
ICAO: International Civil Aviation Organisation  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation



Product name: 1,1,2,2-Tetrachloroethane	
<div>IATA: International Air Transport Association P: Marine Pollutant EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) HMIS: Hazardous Materials Identification System (USA) WHMIS: Workplace Hazardous Materials Information System (Canada) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent PBT: Persistent, Bioaccumulative and Toxic SVHC: Substances of Very High Concern vPvB: very Persistent and very Bioaccumulative ACGIH: American Conference of Governmental Industrial Hygienists (USA) OSHA: Occupational Safety and Health Administration (USA) NTP: National Toxicology Program (USA) IARC: International Agency for Research on Cancer EPA: Environmental Protection Agency (USA) Acute Tox. 1: Acute toxicity – Category 1 Acute Tox. 2: Acute toxicity – Category 2 Muta. 2: Germ cell mutagenicity – Category 2 Carc. 2: Carcinogenicity – Category 2</div>	<div>(Contd. of page 5)</div> <div>USA</div>