

Safety Data Sheet PERCHLOROETHYLENE

SDS no. P5VLJJ9D • Version 1.0 • Date of issue: 2025-11-30

SECTION 1: Identification

GHS Product identifier

Product name PERCHLOROETHYLENE

Other means of identification

Product Product Code

Tetrachloroethylene
PERCHLOROETHYLENE LR PL083

Recommended use of the chemical and restrictions on use

Chemical intermediate; manufacture of fluorocarbons; in cold cleaning and vapour degreasing of metals; drying agent for metals and certain other solids; vermifuge; as a solvent for dry cleaning and for textile finishing and dyeing; transformer insulating fluid; heat transfer medium; for chemical maskant formulations; as a process solvent for desulfurizing coal; as a general industrial solvent; to remove soot from industrial boilers; historically used in the treatment of hookworm and some nematode infestations, but has been replaced by drugs which are less toxic and easier to administer; and laboratory reagent.

Supplier's details

Name ChemSupply Australia Pty Ltd
Address 38-50 Bedford Street
5013 Gillman South Australia
Australia

Telephone 08 8440 2000
email www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

General hazard statement

Classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Hazardous to the aquatic environment, long-term (chronic), Cat. 2
- Carcinogenicity, Cat. 2

GHS label elements, including precautionary statements

Safety Data Sheet

PERCHLOROETHYLENE

SDS no. P5VLJJ9D • Version 1.0 • Date of issue: 2025-11-30

Pictograms



Signal word

Warning

Hazard statement(s)

H351
H411

Suspected of causing cancer
Toxic to aquatic life with long lasting effects

Precautionary statement(s)

P201
P202
P273
P280
P308+P313
P391
P405
P501

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
IF exposed or concerned: Get medical advice/attention.
Collect spillage.
Store locked up.
Dispose of contents/container to an approved waste disposal facility

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight	165.83
-------------------------	--------

Information on Composition: Contains stabilizers.

Component	Identification	Weight %
Tetrachloroethylene	CAS no.: 127-18-4 EC no.: 204-825-9 Index no.: 602-028-00-4	100 %

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice

First Aid Facilities: Maintain eyewash fountain and drench facilities in work area.

If inhaled

If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Immediately obtain medical aid if cough or other symptoms appear.

In case of skin contact

Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. Seek medical advice if effects persist.

In case of eye contact

Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. In all cases of eye contamination it is a sensible precaution to seek medical advice.

If swallowed

Rinse mouth thoroughly with water immediately, repeat until all traces of

Safety Data Sheet

PERCHLOROETHYLENE

SDS no. P5VLJJ9D • Version 1.0 • Date of issue: 2025-11-30

product have been removed. Give water to drink. DO NOT INDUCE VOMITING.
Seek
medical advice if symptoms persist.

Most important symptoms/effects, acute and delayed

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

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

For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Small fire: Use dry chemical, CO₂ or water spray. If safe to do so, move undamaged containers from fire area.

Large fire: Use dry chemical, CO₂, foam or water spray - Do not use water jets.

Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers.

Specific hazards arising from the chemical

Hazards from Combustion Products: Phosgene (highly toxic) and hydrogen chloride gas and hydrochloric acid (corrosive), chlorine, carbon monoxide, carbon dioxide.

Material does not burn. Fire or heat will produce irritating, extremely toxic and/or corrosive gases. Containers may explode when heated. Some may ignite combustibles (wood, paper, clothing, etc.) Contact with metals may evolve flammable hydrogen gas.

Special protective actions for fire-fighters

Wear SCBA and chemical splash suit. Fully-encapsulating, gas-tight suits should be worn for maximum protection. Structural firefighter's uniform is NOT effective for these materials.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.

Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

Precautions for safe handling

Avoid contact with eyes, skin and clothing. Avoid breathing vapour or spray mist. Do not ingest. If ingested, seek medical advice immediately and show the container or the label. Avoid prolonged or repeated exposure. No smoking. Wear appropriate personal protective clothing to prevent skin contact. Wear appropriate eye protection to prevent eye contact. Contact lenses should not be worn when working with this chemical. The worker should immediately wash the skin when it becomes contaminated. Work clothing that becomes wet or significantly contaminated should be removed or replaced. Ensure good ventilation/exhaustion at the workplace. In case of insufficient ventilation, wear suitable respiratory equipment. Wear special protective equipment for maintenance break-in or where exposures may exceed established exposure levels. Wash hands, face, forearms and neck when exiting restricted areas. Shower, dispose of outer clothing, change to clean garments at the end of the day. Avoid cross-contamination of street clothes. Wash hands before eating and do not eat, drink, or smoke in workplace. Containers of this material may be hazardous when empty since they retain product residues (vapours, liquid); observe all warnings and precautions listed for the product. Keep away from incompatibles such as oxidizing agents, metals, acids, alkalis.

Conditions for safe storage, including any incompatibilities

Store in cool, dry, well-ventilated location. Keep well closed and protected from direct sunlight and moisture. Separate from active metals. Isolate from heat and all sources of ignition, and combustibles.

Safety Data Sheet

PERCHLOROETHYLENE

SDS no. P5VLJJ9D • Version 1.0 • Date of issue: 2025-11-30

Corrosiveness: Corrosive to aluminium, iron, and zinc in the presence of water. Can be inhibited by the addition of stabilizers. Pure, stabilized tetrachloroethylene is not corrosive to any of the common construction materials, such as steel, cast iron, stainless steels, or nickel and its alloys at temperatures up to about 140 °C.

Unsuitable Materials: Aluminium, iron and zinc, some forms of plastics, rubber and coatings.

SECTION 8: Exposure controls/personal protection

Control parameters

CAS: 127-18-4

Tetrachloroethylene

AU/SWA (Australia): 150 ppm; 1020 mg/m³ STEL inhalation [Perchloroethylene]; 50 ppm; 340 mg/m³ TWA inhalation [Perchloroethylene]

Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

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

Eye/face protection

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Body protection

Footwear: Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

Body Protection: Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Respiratory protection

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/ NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Liquid
Appearance	Colourless liquid.
Color	Colourless
Odor	Mildly sweet, ethereal, resembling diethyl ether or chloroform odour. The odour can be intense and unpleasant at high concentrations.
Odor threshold	A wide range of values have been reported; 2 to 71 ppm. Reliable values are 47 ppm (detection) and 71 ppm (recognition). Odour may become imperceptible at higher concentrations after prolonged or repeated exposure.

Safety Data Sheet

PERCHLOROETHYLENE

SDS no. P5VLJJ9D • Version 1.0 • Date of issue: 2025-11-30

Melting point/freezing point	-22.5 °C
Boiling point or initial boiling point and boiling range	121 °C
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	Closed containers may explode if exposed to excess heat for a sufficient period of time releasing large quantities of toxic gases or vapours (e.g. hydrogen chloride, phosgene and/or chlorine).
Auto-ignition temperature	No data available.
Decomposition temperature	126 °C
pH	No data available.
Kinematic viscosity	Kinematic Viscosity: 0.54 m ² /s (0.54 centistokes) at 20 °C (calculated). Dynamic Viscosity: 0.88 mPa.s (0.88 centipoise) at 20 °C.
Solubility	Solubility in Water: Practically insoluble (15 mg/100 mL at 25 °C). Solubility in Organic Solvents: Soluble in all proportions in ethanol, diethyl ether, chlorinated organic solvents, such as chloroform and carbon tetrachloride, acetone, benzene, hexane and oils.
Partition coefficient n-octanol/water (log value)	Log P(oct) = 3.40.
Vapor pressure	1.9 kPa (14.25 mm Hg) at 20 °C; 2.5 kPa (18.5 mm Hg) at 25 °C.
Evaporation rate	1.5 to 2.59 (n-butyl acetate = 1); 6.0 (diethyl ether = 1); 9 (ether = 100).
Density and/or relative density	Specific Gravity: 1.623 at 20 °C (water = 1)
Relative vapor density	5.83 (air = 1)
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes

Surface Tension: 32.3 mN/m (32.3 dynes/cm) at 20 °C.

Further safety characteristics (supplemental)

Saturated Vapour Concentration: 18800 ppm (1.88%) at 20 °C; 24300 ppm (2.43%) at 25 °C (calculated).

Other Information: CONVERSION FACTOR: 1 ppm = 6.78 mg/m³; 1 mg/m³ = 0.147 ppm @ 25 °C.

SECTION 10: Stability and reactivity

Reactivity

Stable under normal conditions of storage and handling.

Chemical stability

Stable under ordinary conditions of use and storage. Slowly decomposed by light (especially ultraviolet light) and air to form trichloroacetyl chloride and phosgene, if unstabilized. The unstabilized compound also hydrolyzes very slowly in the presence of water to form corrosive trichloroacetic acid and hydrochloric acid and deteriorates rapidly in warm, moist climates.

Safety Data Sheet

PERCHLOROETHYLENE

SDS no. P5VLJJ9D • Version 1.0 • Date of issue: 2025-11-30

Possibility of hazardous reactions

Strong acids (e.g. sulfuric acid or hydrochloric acid) and strong oxidizing agents (e.g. dinitrogen tetroxide, nitric acid, perchloric acid, oxygen, or peroxides) may react violently with risk of fire and explosion.

Strong bases (e.g. sodium hydroxide, potassium hydroxide) produce spontaneously explosive and flammable dichloroacetylene gas when trichloroethylene is present as an impurity. Copper can react with any dichloroethylenes present as an impurity, to form explosive acetylides. Aluminium powder may react violently or explosively, especially in the presence of water, aluminum chloride and/or cutting oils. Chemically active metals (e.g. granular barium, lithium shavings, beryllium powder, magnesium powder, potassium, sodium or zinc powder) can ignite or explode violently. An explosive reaction occurs with butyllithium in petroleum ether solution.

[22] Hazardous Polymerization: Will not occur.

Conditions to avoid

Excessive heat, open flames, electrical arcs, welding arcs, hot surfaces or other high temperature sources, sunlight, moisture, depletion of stabilizers.

Incompatible materials

Strong acids, strong oxidizing agents (e.g. dinitrogen tetroxide, nitric acid, perchloric acid, oxygen, or peroxides), strong bases (e.g. sodium hydroxide, potassium hydroxide), copper, aluminium powder (especially in the presence of water, aluminum chloride and/or cutting oils), chemically active metals (e.g. granular barium, lithium shavings, beryllium powder, magnesium powder, potassium, sodium or zinc powder), butyllithium (in petroleum ether solution) and liquid oxygen dinitrogen tetraoxide.

Hazardous decomposition products

Hydrogen chloride gas, hydrochloric acid, phosgene, trichloroacetyl chloride, corrosive trichloroacetic acid in the presence of water.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Acute Toxicity - Oral: LD50 (rat): 2,629 mg/kg.

Ingestion: Not highly toxic by this route because of low water solubility. Used therapeutically against hookworm as an oral dosage (1 to 4 ml). May cause central nervous system depression, kidney damage, and liver damage. Symptoms may include: headache, dizziness, excitement, fatigue, abdominal pain, nausea, vomiting, diarrhoea, stupor, and coma. Possible aspiration hazard.

Inhalation: May be irritating to the upper respiratory tract. May cause central nervous system effects including vertigo, anxiety, depression, muscle incoordination, and emotional instability. A single brief (minutes) inhalation exposure to levels above 6000 ppm perchloroethylene may be immediately fatal. Giddiness, headache, intoxication, nausea and vomiting may follow the inhalation of large amounts while massive amounts can cause breathing arrest, liver and kidney damage, and death. Concentrations of 600 ppm and more can affect the central nervous system after a few minutes.

Skin corrosion/irritation

Symptoms include redness (erythema), itching, burning sensation and pain. May be absorbed through the skin with possible systemic effects. Excessive drying of the skin may result from repeated or prolonged contact. Not expected to cause an allergic skin reaction. A short single exposure may cause skin irritation. Prolonged or repeated exposure may cause severe skin irritation, even a burn. Animal and human information indicates that tetrachloroethylene absorption through the skin is minimal. Harmful effects are not expected to occur by this route of exposure.

Serious eye damage/irritation

Contact causes irritation, redness, burning, pain and watering. Vapours cause eye irritation.

Respiratory or skin sensitization

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Safety Data Sheet

PERCHLOROETHYLENE

SDS no. P5VLJJ9D • Version 1.0 • Date of issue: 2025-11-30

Carcinogenicity

Carcinogenicity, Category 2, H351
H351 Suspected of causing cancer.

Reproductive toxicity

Not classified based on available information.

Specific target organ toxicity (STOT) - single exposure

Not classified based on available information.

Specific target organ toxicity (STOT) - repeated exposure

Not classified based on available information.

Aspiration hazard

Not classified based on available information.

Additional information

Chronic Effects: Vapour is harmful to health on prolonged exposure. May cause liver, kidney or central nervous system damage (including muscle tremors and incoordination) after repeated or prolonged exposures. Prolonged or repeated skin contact may cause defatting and dermatitis. There is debate on whether or not chronic exposure can cause subtle deficits to vision.

SECTION 12: Ecological information

Toxicity

Acute Toxicity - Fish: LC50 *Oncorhynchus mykiss* (rainbow trout): 4.99 mg/l; 96 h
OECD Test Guideline 203

Acute Toxicity - Daphnia: EC50 *Daphnia magna* (Water flea): 22 mg/l; 48 h
OECD Test Guideline 202

Persistence and degradability

Biodegradation: 11% / 28 d. Biologically not readily degradable.
BOD5: 0.06 g/g. ThOD: 0.39 g/g.

Bioaccumulative potential

An appreciable bioaccumulation potential is to be expected ($\log P(o/w) > 3$).

Mobility in soil

Distribution: $\log P(o/w)$: 3.4.

SECTION 13: Disposal considerations

Disposal methods

Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Sewage disposal

An appreciable bioaccumulation potential is to be expected ($\log P(o/w) > 3$).

Other disposal recommendations

Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)

Safety Data Sheet

PERCHLOROETHYLENE

SDS no. P5VLJJ9D • Version 1.0 • Date of issue: 2025-11-30

UN Number: 1897
Class: 6.1
Packing Group: III
Proper Shipping Name: TETRACHLOROETHYLENE

Hazchem emergency action code (EAC)

2[Z]

IMDG

UN Number: 1897
Class: 6.1
Packing Group: III
EMS Number:
Proper Shipping Name: TETRACHLOROETHYLENE

IATA

UN Number: 1897
Class: 6.1
Packing Group: III
Proper Shipping Name: TETRACHLOROETHYLENE

SECTION 15: Regulatory information

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

Australia SUSMP

Poison Schedule: S6

SECTION 16: Other information

Further information/disclaimer

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

Preparation information

All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. ChemSupply Australia Pty Ltd accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.

Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'
Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.
Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.
Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019
Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au
IATA, Dangerous Goods Regulations (DGR)
IMO, International Maritime Dangerous Goods Code (IMDG)