

Infosafe No™ 1CH8C	Issue Date : December 2020	RE-ISSUED by CHEMSUPP
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Product Name **PERCHLOROETHYLENE**

Classified as hazardous

1. Identification

GHS Product Identifier	PERCHLOROETHYLENE	
Company Name	CHEMSUPPLY AUSTRALIA PTY LTD (ABN 19 008 264 211)	
Address	38 - 50 Bedford Street GILLMAN SA 5013 Australia	
Telephone/Fax Number	Tel: (08) 8440-2000	
Emergency phone number	CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)	
E-mail Address	www.chemsupply.com.au	
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soot from industrial boilers; historically used in the treatment of hookworm and some nematode infestations, but has been replaced by drugs which are less toxic and easier to administer; and laboratory reagent.	
Other Names	<u>Name</u> Perc Tetrachloroethylene PERCHLOROETHYLENE LR	<u>Product Code</u> PL083

Other Information

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.

2. Hazard Identification

GHS classification of the substance/mixture	Classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) including Work, Health and Safety Regulations, Australia. Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition) Carcinogenicity: Category 2 Hazardous to the Aquatic Environment - Long-Term Hazard: Category 2
Signal Word (s)	WARNING
Hazard Statement (s)	H351 Suspected of causing cancer. H411 Toxic to aquatic life with long lasting effects.
Pictogram (s)	Health hazard, Environment



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Precautionary statement – Prevention	P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P273 Avoid release to the environment. P281 Use personal protective equipment as required.
Precautionary statement – Response	P308+P313 IF exposed or concerned: Get medical advice/attention. P391 Collect spillage.
Precautionary statement – Storage	P405 Store locked up.
Precautionary statement – Disposal	P501 Dispose of contents/container to an approved waste disposal plant.

3. Composition/information on ingredients

Information on Composition Contains stabilizers.

Ingredients	<u>Name</u>	<u>CAS</u>	<u>Proportion</u>
	Perchloroethylene	127-18-4	100 %

4. First-aid measures

Inhalation	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.
Ingestion	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. Give water to drink. DO NOT INDUCE VOMITING. Seek medical advice if symptoms persist.
Skin	Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. Seek medical advice if effects persist.
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.
First Aid Facilities	Maintain eyewash fountain and safety shower in work area. Maintain eyewash fountain and drench facilities in work area.
Advice to Doctor	Treat symptomatically based on judgement of doctor and individual reactions of the patient.
Other Information	For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor at once.

5. Fire-fighting measures

Hazards from Combustion Products	Phosgene (highly toxic) and hydrogen chloride gas and hydrochloric acid (corrosive), chlorine, carbon monoxide, carbon dioxide.
Specific Methods	No limitations to the type of 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	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.
Hazchem Code	2[Z]
Decomposition Temp.	126 °C
Precautions in connection with Fire	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.

6. Accidental release measures

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Spills & Disposal	Evacuate unprotected personnel from danger area. Avoid breathing dust or vapours and contact with skin and eyes.
Personal Precautions	Avoid substance contact. Avoid generation of dusts: do not inhale dusts. Ensure supply of fresh air in enclosed rooms.
Personal Protection	Wear protective clothing specified for normal operations (see Section 8)
Clean-up Methods - Small Spillages	Absorb with dry earth, sand or other non-combustible material. Use clean nonsparking tools to collect and seal in properly labelled drums for disposal in an area approved by local authority bylaws. Wash area down with excess water to remove residual material.
Clean-up Methods - Large Spillages	Seek expert advice on handling and disposal.
Environmental Precautions	Do not discharge to the environment or sewer system. Prevent further leaking if safe to do so. If product contaminates rivers and lakes or drains inform respective authorities.

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.
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.
Storage Regulations	Refer Australian Standard AS/NZS 4452:1997 'The storage and handling of toxic substances'.
Storage Temperatures	Store at room temperature (15 to 25 °C recommended).
Unsuitable Materials	Aluminium, iron and zinc, some forms of plastics, rubber and coatings.

8. Exposure controls/personal protection

Occupational exposure limit values	Name	STEL		TWA		Footnote
		mg/m3	ppm	mg/m3	ppm	
	Perchloroethylene	1020	150	340	50	
Other Exposure Information	These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity. The STEL (Short Term Exposure Limit) is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated for more than 4					

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Appropriate engineering controls	times per day. There should be at least 60 minutes between successive exposures at the STEL. The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. Maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods.
Respiratory Protection	Where ventilation is not adequate, respiratory protection may be required. Avoid breathing vapours or mists. Select and use respirators in accordance with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. When mists or vapours exceed the exposure standards then the use of the following is recommended: Approved respirator with organic vapour and dust/mist filters. Filter capacity and respirator type depends on exposure levels.
Eye 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.
Hand Protection	Wear gloves of impervious material conforming to AS/NZS 2161: Occupational protective gloves - Selection, use and maintenance. Final choice of appropriate glove type will vary according to individual circumstances. This can include methods of handling, and engineering controls as determined by appropriate risk assessments. Avoid skin contact when removing gloves from hands, do not touch the gloves outer surface. Dispose of gloves as hazardous waste.
Personal Protective Equipment	Personal protective equipment should not solely be relied upon to control risk and should only be used when all other reasonably practicable control measures do not eliminate or sufficiently minimise risk. Guidance in selecting personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.
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 impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.
Hygiene Measures	Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

9. Physical and chemical properties

Form	Liquid
Appearance	Colourless liquid.
Odour	Mildly sweet, ethereal, resembling diethyl ether or chloroform odour. The odour can be intense and unpleasant at high concentrations.
Decomposition Temperature	126 °C
Melting Point	-22.5 °C
Boiling Point	121 °C
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.
Specific Gravity	1.623 at 20 °C (water = 1)
Vapour Pressure	1.9 kPa (14.25 mm Hg) at 20 °C; 2.5 kPa (18.5 mm Hg) at 25 °C.
Vapour Density (Air=1)	5.83 (air = 1)
Evaporation Rate	1.5 to 2.59 (n-butyl acetate = 1); 6.0 (diethyl ether = 1); 9 (ether = 100).

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Odour 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.
Volatile Component	100 %vol @ 21 °C.
Partition Coefficient: n-octanol/water	Log P(oct) = 3.40.
Surface Tension	32.3 mN/m (32.3 dynes/cm) at 20 °C.
Flammability	Non combustible material. Non flammable.
Explosion 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).
Molecular Weight	165.83
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.
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/m ³ ; 1 mg/m ³ = 0.147 ppm @ 25 °C.

10. Stability and reactivity

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.
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.
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.
Hazardous Polymerization	Will not occur.

11. Toxicological Information

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,

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Inhalation	vomiting, diarrhoea, stupor, and coma. Possible aspiration hazard. 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	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.
Eye	Contact causes irritation, redness, burning, pain and watering. Vapours cause eye irritation.
Respiratory sensitisation	Not classified based on available information.
Skin Sensitisation	Not classified based on available information.
Germ cell mutagenicity	Not classified based on available information.
Carcinogenicity	Carcinogenicity, Category 2, H351 H351 Suspected of causing cancer.
Reproductive Toxicity	Not classified based on available information.
STOT-single exposure	Not classified based on available information.
STOT-repeated exposure	Not classified based on available 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.
Mutagenicity	Not classified based on available information.

12. Ecological information

Ecotoxicity	Toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment.
Persistence and degradability	Biodegradation: 11% / 28 d. Biologically not readily degradable. BOD5: 0.06 g/g. ThOD: 0.39 g/g.
Mobility	Distribution: log P(o/w): 3.4.
Bioaccumulative Potential	An appreciable bioaccumulation potential is to be expected (log P(o/w) > 3).
Environmental Protection	Do not allow to enter waters, waste water, or soil!
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

13. Disposal considerations

Disposal Considerations	Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and disposed of according to relevant local, state and federal government regulations.
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14. Transport information

Transport Information	Dangerous Goods of Class 6 (Toxic and Infectious Substances) are incompatible in a placard load with any of the following: -Class 1, Class 3, if the Class 3 dangerous goods are nitromethane, Class 8, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids; and are incompatible with food and food packaging in any quantity.
U.N. Number	1897
UN proper shipping name	TETRACHLOROETHYLENE
Transport hazard class(es)	6.1
Hazchem Code	2[Z]
Packing Group	III
EPG Number	6B7
IERG Number	37
Environmental Hazards	Toxic to aquatic organisms. May cause long term adverse effects in the aquatic environment. Not readily biodegradable.

15. Regulatory information

Regulatory Information	All of the significant ingredients in this formulation are compliant with Australian Industrial Chemicals Introduction Scheme (AICIS) regulations. Not listed under WHS Regulation 2011, Schedule 10 - Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
Poisons Schedule	S6

16. Other Information

Literature References	'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'. Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand. Safe Work Australia, 'Hazardous Chemical Information System'. Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances'. Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment'.
Contact Person/Point	Paul McCarthy Ph. (08) 8440 2000 DISCLAIMER STATEMENT: 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.
Empirical Formula & Structural Formula	Empirical Formula: C2Cl4. Structural Formula: Cl2C=CCl2. ...End Of MSDS...

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