Infosafe No™ 1CHEL Issue Date :November 2021 RE-ISSUED by CHEMSUPP

Product Name **TRICHLOROACETIC ACID**

Classified as hazardous

1. Identification

GHS Product Identifier	TRICHLOROACETIC ACID
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	Production of its sodium salt, which is used as a herbicide; also used as a pickling or etching agent in metal surface finishing; a swelling agent and solvent in the plastics industry; auxiliary in textile finishing; decalcifier and fixative in microscopy; protein precipitating agent in laboratories; additive in mineral lubricating oils; polymerization catalyst; intermediate in the chemical synthesis of esters; medical agent in treating skin disorders, to remove genital warts and as an astringent, antiseptic and laboratory reagent.

Other Names

Name	Product Code
TRICHLOROACETIC ACID AR	TA030
Trichloroethanoic acid	

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	Hazardous to the Aquatic Environment - Acute Hazard: Category 1 Hazardous to the Aquatic Environment - Long-Term Hazard: Category 1 Skin Corrosion/Irritation: Category 1 Specific Target Organ Toxicity Single Exposure Category 3 (respiratory tract irritation)
Signal Word (s)	DANGER
Hazard Statement (s)	H314 Causes severe skin burns and eye damage. H335 May cause respiratory irritation. H410 Very toxic to aquatic life with long lasting effects.
Pictogram (s)	Corrosion, Exclamation mark, Environment

Precautionary statement – Prevention	P260 Do not breathe dust/fume/gas/mist/vapours/spray. P264 Wash thoroughly after handling. P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection.

	P273 Avoid release to the environment.
Precautionary statement – Response	P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P363 Wash contaminated clothing before reuse. P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P310 Immediately call a POISON CENTER or doctor/physician. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P391 Collect spillage.
Precautionary statement – Storage	P403+P235 Store in a well-ventilated place. Keep cool. P405 Store locked up.
Precautionary statement – Disposal	P501 Dispose of contents/container to an approved waste disposal plant.

3. Composition/information on ingredients

Ingredients	Name	CAS	Proportion
	Trichloroacetic acid	76-03-9	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. Consult a physician.
Ingestion	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Seek urgent medical assistance. Wash clothing before reuse. Discard contaminated shoes.
Eye contact	If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Seek immediate medical assistance.
First Aid Facilities	Maintain eyewash fountain and safety shower 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.

5. Fire-fighting measures

Hazards from Combustion Products	Toxic phosgene and chlorinated hydrocarbons, such as chloroform, chlorine, and irritating/corrosive hydrogen chloride gas, as well as carbon dioxide and carbon monoxide. Solutions decompose to form chloroform and carbon dioxide.
Specific Methods	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 the fire is out. Avoid getting water inside containers.
Hazchem Code	2X
Decomposition Temp.	Decomposes above the boiling point (197.5 °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

Personal Precautions	Evacuate the area of all non-essential personnel. 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	Sweep up (avoid generating dust) and using clean non-sparking tools transfer to a clean, suitable, clearly labelled container for disposal in accordance with local regulations.
Environmental Precautions	Prevent from entering into drains, ditches, rivers or the sea.

7. Handling and storage

Precautions for Safe Handling	Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation of dust or vapour. Avoid prolonged or repeated exposure. Minimize dust generation and accumulation. Use only with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Keep container tightly closed. Keep container dry. Never add water to this product. Keep away from incompatibles such as oxidizing agents, metals. May corrode metallic surfaces. Protect against physical damage and moisture. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.
Conditions for safe storage, including any incompatibilities	Corrosives area. Store in tightly closed containers, in a cool, dry, well-ventilated area, away from incompatible substances. Hygroscopic. Keep well closed and protected from direct sunlight and moisture. Keep from oxidizing materials, strong bases, strong acids, metals. Keep away from heat and all sources of ignition (open flames), away from areas of high fire hazard. Protect against physical damage. Store under nitrogen. Should be periodically inspected and monitored. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.
Corrosiveness	Corrosive to cast iron, stainless steels, copper, brass, bronze, aluminium, zinc and lead.
Storage Regulations	Refer Australian Standard AS 3780-2008 'The storage and handling of corrosive substances'.
Storage Temperatures	Store at a temperature between 2 and 8 °C.
Recommended Materials	A metallic or coated fibreboard drum using a strong polyethylene inner package.
Unsuitable Materials	Reactive metals (eg. aluminium, zinc).

8. Exposure controls/personal protection

Occupational exposure limit values

Name	STEL		TWA		
	mg/m3	ppm	mg/m3	ppm	Footnote
Trichloroacetic acid			6.7	1	

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.
A time weighted average (TWA) has been established for Trichloroacetic acid (Safe Work Australia) of 6.7 mg/m³, (1 ppm). 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.

Appropriate engineering controls

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 dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive

	pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.
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.
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.
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	Solid
Appearance	Colourless to slightly yellow deliquescent crystals or white crystalline powder.
Odour	Sharp, pungent odour.
Decomposition Temperature	Decomposes above the boiling point (197.5 °C).
Melting Point	58 °C (alpha); 49.6 °C (beta).
Boiling Point	197 °C
Solubility in Water	Soluble at 25 °C (1306 g/100 g).
Solubility in Organic Solvents	Soluble in methanol; very soluble in ethanol, diethyl ether, acetone and benzene; slightly sol in carbon tetrachloride.
Specific Gravity	1.63 at 25 °C (water = 1)
pH	pH <1 (50g/l H2O).
Vapour Pressure	1 hPa at 20 °C.
Vapour Density (Air=1)	5.6
Odour Threshold	0.24 to 0.375 ppm (1.6 to 2.5 mg/m³) (recognition).
Volatile Component	Negligible.
Partition Coefficient: n-octanol/water	Log P(o/w): 1.44
Surface Tension	27.8 mN/m (27.8 dynes/cm) at 80.2 °C.
Flash Point	> 110 °C
Flammability	Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
Explosion Properties	Closed containers may explode in the heat of a fire. May react violently or explosively with strong oxidizing agents (e.g. chromium trioxide, perchlorates, peroxides). Mixture with copper wool and dimethyl sulfoxide reacts violently and explosively. May produce flammable and explosive hydrogen gas when in contact with reactive metals (eg. aluminium, zinc).

Molecular Weight	163.39
Saturated Vapour Concentration	Low; 1300 ppm (0.13%) at 51 °C (calculated).
Other Information	Acidity: Strong acid; pKa = 0.70 (Ka = 0.2) at 25 °C. Note: Trichloroacetic acid is as strong an acid as hydrochloric acid.

10. Stability and reactivity

Chemical Stability	Stable at room temperature in closed containers under normal storage and handling conditions. Decomposes above the boiling point (197.5 °C).
Conditions to Avoid	Dust generation, moisture, heat and incompatibles.
Incompatible Materials	Strong oxidizing agents (e.g. chromium trioxide, perchlorates, peroxides), organic bases (e.g. amines) or inorganic bases (e.g. sodium hydroxide), sulfoxides + copper, reactive metals (e.g. aluminium, iron, zinc), alkali metals (e.g. sodium, potassium, and calcium), metals + water, methanol.
Hazardous Decomposition Products	Phosgene and toxic fumes of chlorides, chloroform, carbon dioxide.
Possibility of hazardous reactions	May react violently or explosively with strong oxidizing agents (e.g. chromium trioxide, perchlorates, peroxides), with increased risk of fire. May react violently with organic bases (e.g. amines) or inorganic bases (e.g. sodium hydroxide), producing heat and pressure, forming chloroform and carbon dioxide; facilitating thermal decomposition of water solutions, forming chloroform. Mixture with dimethyl sulfoxide and copper wool reacts violently and explosively. Highly reactive with reactive metals (eg. aluminium, zinc); may produce flammable and explosive hydrogen gas.
Hazardous Polymerization	Does not occur.

11. Toxicological Information

Acute Toxicity - Oral	LD50 (rat): 3320 mg/kg;
Ingestion	Ingestion of material causes burns to mouth, throat, oesophagus and gastrointestinal tract. Risk of perforation to mouth, oesophagus and gastrointestinal tract. May cause severe and permanent damage to the digestive tract. Other symptoms may include sore throat, severe abdominal pain, tissue damage, salivation, vomiting, vomiting of blood, a burning sensation in mouth and throat, diarrhoea, and pain. In severe cases, shock, severe respiratory effects, and death may result. Ingestion is not a typical route of occupational exposure.
Inhalation	Inhalation of material causes burns to the mucous membranes,coughing and dyspnoea.
Skin	Corrosive. Contact with dust or solid may produce redness, swelling, pain and, in severe cases, corrosive skin damage or skin burns. Blisters and permanent scarring may result. The severity of injury increases with the degree and duration of the exposure.
Eye	Contact with dust or solid can cause mild to severe irritation or corrosive injury (eye burns). The severity of injury increases with the degree and duration of contact. Risk of blindness or permanent eye damage! Symptoms may include pain, redness, swelling, blurred vision and serious corrosive injury. Possible very slow recovery rate. Severe irritation has been observed in one animal test.
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	Trichloroacetic acid [76-03-9] is evaluated in the IARC Monographs as Group 2A: Possibly carcinogenic to humans.

	Not classified based on available information.
Reproductive Toxicity	Not classified based on available information.
STOT-single exposure	Specific Target Organ Toxicity Single Exposure Category 3 (respiratory tract irritation) H335 May cause respiratory irritation.
STOT-repeated exposure	Not classified based on available information.
Chronic Effects	Long exposures to acid fumes may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of bronchial pneumonia may also occur. Repeated or prolonged skin contact can probably cause redness, drying and itching (dermatitis).
Serious eye damage/irritation	Skin Corrosion/Irritation: Category 1 H314 Causes severe skin burns and eye damage.
Skin corrosion/irritation	Skin Corrosion/Irritation: Category 1 H314 Causes severe skin burns and eye damage.

12. Ecological information

Ecotoxicity	Harmful effect due to pH shift. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Persistence and degradability	Biological degradation: Biodegradation: 59%/20d. Not readily biodegrable. Soluble in water persistence is unlikely.
Mobility	Will likely be mobile in the environment due to its solubility.
Bioaccumulative Potential	No appreciable bioaccumulation is to be expected (log P(o/w) 1-3). Distribution: log P (o/w): 1.44
Information on Ecological Effects	Harmful to aquatic life / birdlife.
Environmental Protection	Do not allow to enter waters, waste water, or soil!

13. Disposal considerations

Disposal Considerations	Whatever cannot be saved for recovery or recycling should be disposed of according to relevant local, state and federal government regulations.

14. Transport information

Transport Information	Dangerous goods of Class 8 (Corrosive) are incompatible in a placard load with any of the following: Class 1, Class 4.3, Class 5, Class 6, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids, Class 7; and are incompatible with food and food packaging in any quantity.
U.N. Number	1839
UN proper shipping name	TRICHLOROACETIC ACID
Transport hazard class(es)	8
Hazchem Code	2X
Packing Group	II
EPG Number	8A1
IERG Number	36
Environmental Hazards	Harmful effect due to pH shift.

15. Regulatory information

Regulatory Information	All the constituents of this product are listed on the Australian Inventory of Chemical Substances (AICS), or exempted. 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:
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Empirical Formula & Structural Formula

Empirical Formula: C2-H-Cl3-O2.
Structural Formula: Cl3CCOOH.

...End Of MSDS...