Safety Data Sheet TRICHLOROACETIC ACID, 25% - 50% w/v

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SECTION 1: Identification

GHS Product identifier

Product name	TRICHLOROACETIC ACID, 25% - 50% w/v

Other means of identification

Product	Product Code
Trichloroacetic Acid 10% w/v	0599/
Trichloroacetic Acid 25% w/v	5696/
Trichloroacetic Acid 50% w/v	2921/

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.

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

- Serious eye damage/eye irritation, Cat. 1
- Skin corrosion/irritation, Cat. 1A

GHS label elements, including precautionary statements

Pictograms

Signal word	**Danger**

Hazard statement(s)

H314	Causes severe skin burns and eye damage

Precautionary statement(s)

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physcian
P363	Wash contaminated clothing before reuse.
P405	Store locked up.
P501	Dispose of contents/container to an approved waste disposal facility

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight	163.39

Component	Identification	Weight %	Classifications
Trichloroacetic acid	CAS no.: 76-03-9 EC no.: 200-927-2 Index no.: 607-004-00-7	10 - 50 %	CLASSIFICATIONS: Skin corrosion/irritation, Cat. 1A; Hazardous to the aquatic environment, short-term (acute), Cat. 1; Hazardous to the aquatic environment, long-term (chronic), Cat. 1. HAZARDS: H314 - Causes severe skin burns and eye damage; H400 - Very toxic to aquatic life; H410 - Very toxic to aquatic life with long lasting effects. [SCLs/M-factors/ATEs]: STOT SE 3; H335: C ≥ 1 %
Water/aqua/eau	CAS no.: 7732-18-5	50 - 90 % (volume)	CLASSIFICATIONS: No data available. HAZARDS: No data available.

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor (at once).

	First Aid Facilities: Maintain eyewash fountain 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. Seek medical aid.
In case of skin contact	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician
In case of eye contact	If contact with the eye(s) occurs, wash with copious amounts of water for approximately 15 minutes holding eyelid(s) open. Take care not to rinse contaminated water into the non-affected eye. Immediately obtain medical attention.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Immediately seek medical advice.

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 in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

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 the fire is out. Avoid getting water inside containers.

Specific hazards arising from the chemical
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.

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
Avoid dust formation. Avoid breathing vapours, mist or gas. 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 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.

Recommended Materials: A metallic or coated fibreboard drum using a strong polyethylene inner package.

Unsuitable Materials: Reactive metals (eg. aluminium, zinc).

SECTION 8: Exposure controls/personal protection

Control parameters

CAS: 76-03-9
Trichloroacetic acid
AU/SWA (Australia): 1 ppm; 6.7 mg/m3 TWA inhalation

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 and 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 to slightly yellow solution

Color	No data available.
Odor	Sharp, pungent odour.
Odor threshold	No data available.
Melting point/freezing point	No data available.
Boiling point or initial boiling point and boiling range	No data available.
Flammability	Not flammable
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	Decomposes above the boiling point (197.5 °C).
Oxidizing properties	No data available.
pH	pH <1 (50g/l H2O).
Kinematic viscosity	No data available.
Solubility	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.
Partition coefficient n-octanol/water (log value)	Log P(o/w): 1.44
Vapor pressure	1 hPa at 20 °C.
Evaporation rate	No data available.
Density and/or relative density	Approx 1.2
Relative vapor density	No data available.
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes
No data available.

Further safety characteristics (supplemental)
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.

SECTION 10: Stability and reactivity

Reactivity
Stable under normal conditions of storage and handling.

Reacts with incompatible materials

Chemical stability
Stable under recommended storage conditions.

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.

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.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
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 corrosion/irritation
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.

Skin corrosion/irritation: Skin Corrosion/Irritation: Category 1
H314 Causes severe skin burns and eye damage.

Serious eye damage/irritation
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.

Serious eye damage/irritation: Skin Corrosion/Irritation: Category 1
H314 Causes severe skin burns and eye damage.

Respiratory or skin sensitization
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.

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: 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).

SECTION 12: Ecological information

Persistence and degradability
Biological degradation: Biodegradation: 59%/20d. Not readily biodegrable.
Soluble in water persistence is unlikely.

Bioaccumulative potential
Distribution: log P (o/w): 1.44

Mobility in soil
Will likely be mobile in the environment due to its solubility.

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
Distribution: log P (o/w): 1.44

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

SECTION 14: Transport information

ADG (Road and Rail)
UN Number: 1839
Class: 8
Packing Group: II
Proper Shipping Name: TRICHLOROACETIC ACID

Hazchem emergency action code (EAC)
2X

IMDG
UN Number: 1839
Class: 8
Packing Group: II
EMS Number:
Proper Shipping Name: TRICHLOROACETIC ACID

IATA
UN Number: 1839
Class: 8
Packing Group: II
Proper Shipping Name: TRICHLOROACETIC ACID

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.

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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 fot 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 Airbourne 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)