

Safety Data Sheet Trichloroisocyanuric acid Revision 4, Date 25 Aug 2017

1. IDENTIFICATION

Product Name Trichloroisocyanuric acid

Other Names ATCC 200 g Tablets

Uses Water treatment and disinfectant; Used as biocide in swimming pools, industrial cycling water, drinking water;

Mosquito repellent.

Chemical Family No Data Available **Chemical Formula** C3Cl3N3O3

Chemical Name 1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, 1,3,5-trichloro-

Product Description Available Chlorine: >=88.5 %

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Pty Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Schedule 6 Poisons Schedule (Aust)

Globally Harmonised System



Hazard Classification Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of

Chemicals (GHS)

Hazard Categories Oxidising Solids - Category 2

Acute Toxicity (Oral) - Category 4 Acute Toxicity (Inhalation) - Category 4 Skin Corrosion/Irritation - Category 2

Serious Eye Damage/Irritation - Category 2A

Specific Target Organ Toxicity (Single Exposure) - Category 3 Acute Hazard To The Aquatic Environment - Category 1 Long-term Hazard To The Aquatic Environment - Category 1

Pictograms







Signal Word Danger

Hazard Statements H272 May intensify fire; oxidizer.

H302 + H332 Harmful if swallowed or if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.H335 May cause respiratory irritation.

H410 Very toxic to aquatic life with long lasting effects.

AUH031 Contact with acids liberates toxic gas

Precautionary Statements Prevention P210 Keep away from heat.

P221 Take any precaution to avoid mixing with combustibles/organic material.

P280 Wear protective gloves/eye protection/face protection.

P261 Avoid breathing dusts or mists.
P273 Avoid release to the environment.

P270 Do not eat, drink or smoke when using this product.P271 Use only outdoors or in a well-ventilated area.

Response **P370 + P378** In case of fire: Use water for extinction.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P302 + P352P337 + P313If ON SKIN: Wash with plenty of soap and water.P337 + P313If eye irritation persists: Get medical advice/attention.

P391 Collect spillage.P330 Rinse mouth.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position

comfortable for breathing.

P332 + P313 If skin irritation occurs: Get medical advice/attention.

P362 Take off contaminated clothing and wash before reuse.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing.

Storage P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal P501 Dispose of contents/container in accordance with local / regional / national /

international regulations.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications	Physical Hazards	5.1.1B	Oxidising substances that are liquids or solids: medium hazard
	Health Hazards	6.1D	Substances that are acutely toxic - Harmful
		6.3A	Substances that are irritating to the skin
		8.3A	Substances that are corrosive to ocular tissue
	Environmental Hazards	9.1A	Substances that are very ecotoxic in the aquatic environment
		9.2D	Substances that are slightly harmful in the soil environment
		9.3B	Substances that are ecotoxic to terrestrial vertebrates

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Trichloroisocyanuric acid	C3Cl3N3O3	87-90-1	<=100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed IF SWALLOWED: Rinse mouth, then drink plenty of water. Do NOT induce vomiting. Call a Poison Centre or

doctor/physician for advice. Never give anything by mouth to an unconscious person.

Eye IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally

lifting the upper and lower lids. Protect unharmed eye. Remove contact lenses if present and easy to do. Continue rinsing until advised to stop by a Poisons Information Centre or a doctor, or for at least 15 minutes. If eye irritation

persists, get medical advice/attention or consult an eye specialist.

Skin IF ON SKIN (or hair): Remove material from skin immediately. Flush skin and hair with running water for at least 15

minutes. Take off contaminated clothing and wash before reuse. If skin irritation occurs, get medical advice/attention.

Inhaled IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a Poison Centre

or doctor/physician for advice. Apply resuscitation if victim is not breathing. Administer oxygen if breathing is difficult.

Keep victim calm and warm - Obtain immediate medical care.

Advice to Doctor Treat symptomatically. Ensure that attending medical personnel are aware of identity and nature of the product(s)

involved, and take precautions to protect themselves.

Medical Conditions Aggravated

by Exposure

No information available.

5. FIRE FIGHTING MEASURES

General Measures If safe to do so, move undamaged containers from fire area - Do not move cargo if cargo has been exposed to heat.

Cool containers with water spray until well after fire is out; If impossible, withdraw from area and let fire burn. Avoid

getting water inside containers. Dam fire control water for later disposal.

Flammability Conditions OXIDISING SUBSTANCE: Will accelerate burning when involved in a fire.

Extinguishing MediaUse flooding quantities of water for extinction - Do not use dry chemicals, Carbon dioxide (CO2) or foam. For large

fires: Flood fire area with water from a protected position.

Fire and Explosion Hazard Risk of violent reaction or explosion: May explode from heating, shock, friction or contamination. May ignite

combustibles. Containers may explode when heated. Runoff may create fire or explosion hazard.

Hazardous Products of

Combustion

Fire may produce irritating, toxic and/or corrosive gases, including Nitrogen oxides (NOx), Hydrogen chloride (HCI),

Chlorine

Special Fire Fighting

Instructions

Contain runoff from fire control or dilution water - Runoff may pollute waterways; Runoff may create fire or explosion

hazard.

Personal Protective Equipment Wear self-contained breathing apparatus (SCBA) and chemical splash suit. Structural firefighter's uniform will provide

limited protection.

Flash PointNo Data AvailableLower Explosion LimitNo Data AvailableUpper Explosion LimitNo Data AvailableAuto Ignition TemperatureNo Data Available

Hazchem Code 1W

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure Ensure adequate ventilation. Do not contaminate - Keep combustibles away from spilled material. Prevent exposure

to heat. ELIMINATE all ignition sources. Avoid generating dust. Avoid breathing dust and contact with eyes, skin and

clothing.

Clean Up Procedures Sweep up (avoiding generation of dust) then immediately spread as a thin layer in an uncontaminated, dry open area,

to avoid the possibility of hot spots forming. Gradually hose to drain ensuring large dilution. Do not store or transport swept up material. Do not return spilled material to original container. Avoid getting water inside containers, a violent reaction may occur. Where a spill has occurred in a confined space or an unventilated building, and the material is damp and evolving chlorine, the rate of chlorine evolution can be reduced by covering the thing spread solid with

soda ash. Due to high risk of contamination, recycling/recovery is not recommended (see SECTION 13).

Containment Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas.

Decontamination Flush with large quantities of water.

Environmental Precautionary

Measures

Spillages and uncontrolled runoff should be prevented from entering drains and watercourses.

Evacuation Criteria Spill or leak area should be isolated immediately. Keep unauthorised personnel away. Keep upwind and to higher

ground. Large spills: Immediately contact Emergency Services; Consider initial downwind evacuation of areas within

at least 100 m.

Personal Precautionary

Measures

Do not touch damaged containers or spilled material unless wearing appropriate protective clothing (see SECTION 8).

Large spills: Wear self-contained breathing apparatus (SCBA) and chemical splash suit.

7. HANDLING AND STORAGE

Handling Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure

adequate ventilation - Use only outdoors or in a well-ventilated area. Handle in accordance with good industrial hygiene and safety practice. Minimise dust generation and accumulation. Avoid breathing dust/mist/vapours and contact with eyes, skin and clothing. Use personal protective equipment as required (see SECTION 8). Keep away from heat and sources of ignition - No smoking. Do not contaminate or mix with other chemicals. Take any precaution to avoid mixing with combustibles. When mixing with water, NEVER add water to product - ALWAYS add product to water and use clean, dry dispensing equipment. Avoid release to the environment; Collect spillage (see

SECTION 6).

Storage Storage Store in a cool, dry and well-ventilated place, out of direct sunlight. Maximum storage temperature: 25 °C. Keep

container upright and tightly sealed. Keep away from heat and sources of ignition - No smoking. Protect from moisture/humidity (hygroscopic). Do not use wooden shelves. Keep/store away from combustibles and incompatible

materials (see SECTION 10). Store locked up.

Container Keep in the original container or suitable material, i.e. steel, stainless steel.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General No specific exposure standards are available for this product.

DECOMPOSITION PRODUCT: Chlorine (CAS No. 7782-50-5):

- Safe Work Australia Exposure Standard: TWA = 1 ppm (3 mg/m3) Peak limitation. New Zealand WES: TWA = 0.5 ppm (1.5 mg/m3); STEL = 1 ppm (2.9 mg/m3).

Exposure Limits No Data Available

Biological Limits No information available.

Engineering Measures A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local

exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source,

preventing dispersion of it into the general work area.

Personal Protection Equipment - Respiratory protection: Wear respiratory protection in case of inadequate ventilation and for chlorine/dust inhalation protection. Recommended: BE-P (Inorganic vapour/Acid gas/Particulate) filter respirator (refer to AS/NZS 1715 &

- Eye/face protection: Wear appropriate eye protection to prevent eye contact. Recommended: Tightly sealed

goggles.

- Hand protection: Wear protective gloves. Recommended: Nitrile rubber (Minimum break-through time: 480 min;

Minimum thickness: 0.11 mm).

- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Long-

sleeves, plastic apron, boots if handling large quantities.

Special Hazards Precaustions

Thermal hazards: Wear suitable protective clothing to prevent heat.

Work Hygienic Practices

Freezing Point

Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective

equipment before entering eating areas. Wash contaminated clothing and shoes before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State

Appearance Crystalline (powder, granules, tablets)

Odour Chlorine, pungent Colour White or green

рΗ 2.0 - 3.3 10 g/l (20 °C) **Vapour Pressure** No Data Available **Relative Vapour Density** No Data Available **Boiling Point** No Data Available No Data Available **Melting Point**

No Data Available Solubility 0.1 g/l in water (decomposes slowly) - 12 g/l in water

Specific Gravity No Data Available Flash Point No Data Available **Auto Ignition Temp** No Data Available **Evaporation Rate** No Data Available **Bulk Density** ~850 kg/m3 **Corrosion Rate** No Data Available **Decomposition Temperature** 225 - 230 °C 2.07 g/cm3 **Density** No Data Available **Specific Heat Molecular Weight** 232.41 g/mol **Net Propellant Weight** No Data Available **Octanol Water Coefficient** No Data Available **Particle Size** No Data Available **Partition Coefficient** No Data Available Saturated Vapour Concentration No Data Available Vapour Temperature No Data Available Viscosity No Data Available **Volatile Percent** No Data Available **VOC Volume** No Data Available Additional Characteristics No information available.

Potential for Dust Explosion No information available.

Fast or Intensely Burning

Characteristics

Risk of violent reaction or explosion: May explode from heating, shock, friction or contamination.

Flame Propagation or Burning Rate of Solid Materials No information available.

Non-Flammables That Could Contribute Unusual Hazards to a

Exothermic reaction with water.

Fire
Properties That May Initiate of

OXIDISING SUBSTANCE: Will accelerate burning when involved in a fire. May ignite combustibles.

Properties That May Initiate or Contribute to Fire Intensity Reactions That Release Gases

Nitrogen trichloride is formed on contact with water or humidity. During heating or in case of fire, poisonous gases

are produced, including nitrogen oxides (NOx), hydrogen chloride (HCl), chlorine.

Release of Invisible Flammable Vapours and Gases

Gives off hydrogen by reaction with metals.

10. STABILITY AND REACTIVITY

General Information Highly reactive oxidising chlorine compound. May cause fire or explosion. Gives off hydrogen by reaction with metals.

Exothermic reaction with water.

Chemical Stability Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid Keep away from heat. Do not contaminate. Protect from moisture/humidity.

Materials to Avoid Incompatible/reactive with easily oxidisable material such as organic compounds, reducing agents, nitrogen

containing compounds, sodium or calcium hypochlorite, other oxidisers, acids and alkalis.

Hazardous Decomposition

Products

or Vapours

Nitrogen trichloride is formed on contact with water or humidity. During heating or in case of fire, poisonous gases

are produced, including nitrogen oxides (NOx), hydrogen chloride (HCl), chlorine.

Hazardous Polymerisation No information available.

11. TOXICOLOGICAL INFORMATION

General Information - Acute toxicity: Harmful if swallowed and if inhaled.

- Skin corrosion/irritation: Causes skin irritation. In contact with skin moisture, the chemical produces hypochlorous acid and, at high concentrations, the chemical will be a severe skin irritant [NICNAS].

- Eye damage/irritation: Causes serious eye irritation. The possibility of serious damage to eyes cannot be ruled out [NICNAS].

- Respiratory/skin sensitisation: Not classified. Not known to be a dermal sensitiser [NICNAS].

- Germ cell mutagenicity: Not classified. Not considered mutagenic [NICNAS].

- Carcinogenicity: Not classified.

- Reproductive toxicity: Not classified.

- STOT (single exposure): May cause respiratory irritation.

- STOT (repeated exposure): Not classified. Does not have high repeat dose toxicity via the oral route; Could be moderately toxic via inhalation, although the main symptoms are consistent with an irritant effect [NICNAS].

- Aspiration toxicity: Not classified.

Acute

Ingestion Acute toxicity (Oral):

- LD50, Rat: 490 mg/kg [Supplier's SDS].

Other Acute toxicity (Dermal):

- LD50, Rabbit: 7,600 mg/kg [Supplier's SDS].

Carcinogen Category None

12. ECOLOGICAL INFORMATION

Ecotoxicity No information available.

Persistence/Degradability
No information available.

Mobility
No information available.

Environmental Fate Very toxic to aquatic life with long lasting effects - Prevent entry into drains and waterways.

Bioaccumulation Potential No information available.

Environmental Impact No Data Available

13. DISPOSAL CONSIDERATIONS

General Information Due to the high risk of contamination, recycling/recovery is not recommended. Dispose of contents/container by

controlled incineration and in accordance with local/regional/national regulations.

Special Precautions for Land Fill Contaminated packaging: Emptied container might retain product residues - Follow all warnings even after the

container is emptied.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name TRICHLOROISOCYANURIC ACID, DRY

Class 5.1 Oxidising Substances

Subsidiary Risk(s) No Data Available

EPG 31 Oxidizing Substances

 UN Number
 2468

 Hazchem
 1W

 Pack Group
 II

Special Provision No Data Available

Land Transport (Malaysia)

ADR Code

Proper Shipping Name TRICHLOROISOCYANURIC ACID, DRY

Class 5.1 Oxidising Substances

Subsidiary Risk(s) No Data Available

EPG 31 Oxidizing Substances

 UN Number
 2468

 Hazchem
 1W

 Pack Group
 II

Special Provision No Data Available

Land Transport (New Zealand)

NZS5433

Proper Shipping Name TRICHLOROISOCYANURIC ACID, DRY

Class 5.1 Oxidising Substances

Subsidiary Risk(s) No Data Available

EPG 31 Oxidizing Substances

UN Number 2468 Hazchem 1W Pack Group

Special Provision No Data Available

Land Transport (United States of America)

US DOT

Proper Shipping Name TRICHLOROISOCYANURIC ACID, DRY

Class 5.1 Oxidising Substances

Subsidiary Risk(s) No Data Available ERG 140 Oxidizers

 UN Number
 2468

 Hazchem
 1W

 Pack Group
 II

Special Provision No Data Available

Sea Transport

IMDG Code

Proper Shipping Name TRICHLOROISOCYANURIC ACID, DRY

Class 5.1 Oxidising Substances

Subsidiary Risk(s) No Data Available

 UN Number
 2468

 Hazchem
 1W

 Pack Group
 II

Special Provision No Data Available

EMS F-A, S-Q **Marine Pollutant** Yes

Air Transport

IATA DGR

Proper Shipping Name TRICHLOROISOCYANURIC ACID, DRY

Class 5.1 Oxidising Substances

Subsidiary Risk(s) No Data Available

 UN Number
 2468

 Hazchem
 1W

 Pack Group
 II

Special Provision No Data Available

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods

by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

General Information CHLORINATING COMPOUNDS (containing > 20 % available chlorine) are listed in Schedule 6 of the SUSMP.

Poisons Schedule (Aust) Schedule 6

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code HSR001359

National/Regional Inventories

Australia (AICS) Listed

Canada (DSL) Not Determined

Canada (NDSL) Not Determined

China (IECSC) Not Determined

Europe (EINECS) 201-782-8

Europe (REACh)Not Determined

Japan (ENCS/METI) Not Determined

Korea (KECI) Not Determined

Malaysia (EHS Register) Not Determined

New Zealand (NZIoC) Listed

Philippines (PICCS) Not Determined

Switzerland (Giftliste 1) Not Determined

Switzerland (Inventory of Notified

Substances)

Not Determined

Taiwan (NCSR) Not Determined

USA (TSCA) Not Determined

16. OTHER INFORMATION

Related Product Codes TRCHIS0100, TRCHIS0101, TRCHIS0110, TRCHIS0115, TRCHIS0200, TRCHIS0201, TRCHIS0205, TRCHIS0210,

TRCHIS0215, TRCHIS0400, TRCHIS0500, TRCHIS0501, TRCHIS0502, TRCHIS0503, TRCHIS0504, TRCHIS0505, TRCHIS0506, TRCHIS0507, TRCHIS0508, TRCHIS0508, TRCHIS0550, TRCHIS0600, TRCHIS0601, TRCHIS0710, TRCHIS0711, TRCHIS0715, TRCHIS0725, TRCHIS0800, TRCHIS0815, TRCHIS0900, TRCHIS0915, TRCHIS0925, TRCHIS0926, TRCHIS0927, TRCHIS1000, TRCHIS1001, TRCHIS1002, TRCHIS1003, TRCHIS1004, TRCHIS1005, TRCHIS1006, TRCHIS1007, TRCHIS1008, TRCHIS1009, TRCHIS1010, TRCHIS1011, TRCHIS1012, TRCHIS1013, TRCHIS1014, TRCHIS1015, TRCHIS1016, TRCHIS1017, TRCHIS1018, TRCHIS1019, TRCHIS1020, TRCHIS1021, TRCHIS1022, TRCHIS1023, TRCHIS1024, TRCHIS1025, TRCHIS1026, TRCHIS1027, TRCHIS1028, TRCHIS1029, TRCHIS1030, TRCHIS1031, TRCHIS1032, TRCHIS1033, TRCHIS1034, TRCHIS1034, TRCHIS1034, TRCHIS1035, TRCHIS1035, TRCHIS1034, TRCHIS1035, TRCHIS1035, TRCHIS1036, TRCHIS1036, TRCHIS1036, TRCHIS1036, TRCHIS1037, TRCHIS1037, TRCHIS1038, TRCHIS1039, TRCHIS109, TRCHIS1039, TRCHIS1039, TRCHIS109, TRCHIS1039, TRCHIS10

Revision 4

Revision Date 25 Aug 2017

Key/Legend

< Less Than

> Greater Than

AICS Australian Inventory of Chemical Substances

atm Atmosphere

CAS Chemical Abstracts Service (Registry Number)

cm² Square Centimetres

CO2 Carbon Dioxide

COD Chemical Oxygen Demand

deg C (°C) Degrees Celcius

EPA (New Zealand) Environmental Protection Authority of New Zealand

deg F (°F) Degrees Farenheit

g Grams

g/cm³ Grams per Cubic Centimetre

a/I Grams per Litre

HSNO Hazardous Substance and New Organism **IDLH** Immediately Dangerous to Life and Health

immiscible Liquids are insoluable in each other.

inHg Inch of Mercury inH2O Inch of Water

K Kelvin

kg Kilogram

kg/m³ Kilograms per Cubic Metre

Ib Pound

LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours. LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.

Itr or L Litre

m³ Cubic Metre

mbar Millibar

mg Milligram

mg/24H Milligrams per 24 Hours

mg/kg Milligrams per Kilogram

mg/m³ Milligrams per Cubic Metre

Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present.

mm Millimetre

mmH2O Millimetres of Water

mPa.s Millipascals per Second

N/A Not Applicable

NIOSH National Institute for Occupational Safety and Health

NOHSC National Occupational Heath and Safety Commission

OECD Organisation for Economic Co-operation and Development

Oz Ounce

PEL Permissible Exposure Limit

Pa Pascal

ppb Parts per Billion

ppm Parts per Million

ppm/2h Parts per Million per 2 Hours

ppm/6h Parts per Million per 6 Hours

psi Pounds per Square Inch

R Rankine

RCP Reciprocal Calculation Procedure

STEL Short Term Exposure Limit

TLV Threshold Limit Value

tne Tonne

TWA Time Weighted Average

ug/24H Micrograms per 24 Hours

UN United Nations

wt Weight