



Safety Data Sheet

Review Date: 4 July 2018

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name(s) :	HY-CLOR MULTI SWIMMING POOL TABLETS
Chemical Name (s):	Trichloroisocyanuric Acid
Synonyms:	1,3,5-trichloro-1,3,5- triazinane-2,4,6-trione, Symclosene, trichloro-1,3,5-triazinetriol, trichloroisocyanuric acid.
Product Code:	HYCTM04-1KG, HYCTM08-2KG, HYCTM16-4kg
Recommended Use of the Chemical and Restrictions on Use:	Swimming Pool disinfectant and water treatment
Supplier:	HY-CLOR AUSTRALIA PTY LTD
Street Address:	178 Power Street Glendenning NSW 2761
Telephone Number:	02 8805 2400
After Hours Contact:	0404 859 515
Facsimile:	02 8805 2401
Email Contact:	help@hyclor.com.au
Emergency Telephone:	13 11 26 (Australia Poisons Information Centre)

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information"

2. HAZARDS IDENTIFICATION

Classified as hazardous according to the criteria of the GHS as adopted in Australia. A Dangerous Good according to ADG 7.5.

Poisons Schedule: S5. SIGNAL WORD: Poison

GHS Hazard Statement(s)

Oxidising Solid	Category 2	H272	May Intensify fire: oxidizer
Acute Oral Toxicity	Category 4	H302	Harmful if swallowed
Eye irritation/corrosion	Category 1	H318	Causes serious eye damage
Reproductive toxicity	Category 1	H360	May damage fertility or the unborn child
Specific Target Organ Toxicity, Single Exposure	Category 3	H335	May cause respiratory irritation
Aquatic acute toxicity	Category 1	H400	Very Toxic to the aquatic life
Aquatic chronic toxicity	Category 1	H410	Very toxic to aquatic life with long lasting effects

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Precautionary statements

Prevention:
P210: Keep away from heat.
P220: Keep/Store away from clothing, other chemicals, acids and combustible materials such as paper, fabric, sawdust or kerosene.
P221: Take any precaution to avoid mixing with combustibles, acids and other chemicals ...
P261: Do not breathe dust.
P264: Wash face and hands thoroughly after handling.
P270 : Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/ eye protection/ face protection.
P273: Avoid release to the environment. - if this is not the intended use.

Response:
P301 + 312 +P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician if you feel unwell.
P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P310+P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician
P370+P378: In case of fire: Use water for extinction.
P391: Collect spillage.

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 waste disposal legislation



Hazard pictograms

Signal word Danger

Label Statements:	Keep out of reach of Children Read Label before use If medical advice is needed, have product container or label at hand.
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3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	CAS Number	Concentration (% w/w)
Trichloroisocyanuric acid	87-90-1	90.4
Copper Sulphate Pentahydrate	7758-99-8	3
Aluminium Sulphate	10043-01-3	5 - 10
Boric Acid	11113-50-1	<1



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4. FIRST AID MEASURES

If poisoning occurs, or medical advice needed contact a Poisons Information Centre. Phone Australia 13 1126 or a doctor. Have this SDS when you call.

Swallowed:	Do not induce vomiting unless advised to do so from, a medical practitioner. Give a glass of water. Wash out mouth with water. Seek medical attention.
Skin:	Rinse with plenty of water for at least 15 minutes then remove contaminated clothes. Wash affected area thoroughly with soap and water. Remove contaminated clothing and wash before reuse or discard. If irritation occurs seek immediate medical attention.
Eye:	If in eyes, remove contact lenses if present, hold eyes open, flood with water or normal saline solution for at least 15 minutes. Take care not to rinse contaminated water into the non-affected eye. If irritation occurs seek immediate medical attention.
Inhaled:	Remove from contaminated area. If symptoms) such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop seek medical attention.
Note to Physician	Treat symptomatically
First Aid Facilities	Eye wash and normal washroom facilities. First Aid Kit.
Medical Conditions that may be aggravated by exposure	Asthma and respiratory and cardiovascular disease.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:	Flooding water spray from a distance. Do not use foam or dry agent.
Special hazards arising from the chemical:	Consider downwind evacuation. Remove ignition sources. Closed containers may rupture violently when heated. Thermally unstable. Decomposes at 225 °C). Keep containers cool. Inhalation, ingestion or contact (skin, eyes) with vapors or substance may cause severe injury, burns or death. Fire may produce irritating, corrosive and/or toxic gases. May react with water releasing gaseous chlorine, sulphuric acid and oxides of sulphur. If mixed with a small amount of water, the concentrated solution (with pH at about 2.0) may explode due to the evolution of unstable nitrogen trichloride. May react explosively with hydrocarbons (fuels). May ignite combustibles (wood, paper, oil, clothing, etc.). Runoff may create fire or explosion hazard. Runoff from fire control or dilution water may cause pollution.
Special protective equipment and precautions for fire firefighters:	The product is not combustible. In confined areas or areas of excessive smoke, fire fighters must wear full protection and self-contained breathing apparatus.

Hazchem Code: 1W

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedure

Evacuate all unnecessary personnel. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if you can do it without risk. Do not get water inside containers. Avoid skin and eye contact and inhalation of dust. Wear appropriate protective equipment and clothing – See section 8. Use in a well ventilated area. Keep containers closed when not in use.

Environmental precautions

Keep spilt products out of drains, sewers and waterways. If large quantities of this material enter the waterways contact the Environmental Protection Authority, or your local Waste Management Authority.

Methods and materials for containment and cleaning up

For **minor spills**, Sweep up, place in a sealed container and place in garbage. Wash area down with excess water. For large spills contact the emergency response number.

7. HANDLING AND STORAGE

Keep out of the reach of children.

Precautions for safe handling

Avoid skin and eye contact and breathing in dust. Wear appropriate protective equipment and clothing. Remove contaminated clothing. Use in a well-ventilated area. Avoid spillage onto floor. Maintain personal hygiene by washing hands prior to eating, drinking, smoking or using toilet.

Safe storage, including any incompatibilities

Store in a cool, dry well-ventilated area, out of direct sunlight. Store in labelled, original containers. Keep containers tightly closed and upright. Avoid spillage onto the floor. Do not allow into contact with water. Store away from sources of ignition, heat and incompatible materials described in Section 10.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits: Exposure limits have not been established by Safe Work Australia for this product or any of its components. It is appropriate to apply the exposure standard for nuisance dusts of 10 mg/m³, measured as inhalable dust (8 hour TWA).

Trichloroisocyanuric acid: Workplace Exposure Standard(s) for decomposition product(s) are:

- Chlorine: Peak Limitation = 3 mg/m³ (1 ppm)
- Hydrogen chloride: TWA Peak Limitation = 7.5 mg/m³ (5 ppm)
- Nitric oxide: 8hr TWA = 31 mg/m³ (25 ppm)
- Sulphuric acid: TWA 3 mg/m³, STEL 3 mg/m³

Boric acid: Workplace Exposure Standard(s) for decomposition product(s) are:

- Boron oxide: TWA = 10 mg/m³



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Exposure controls

Appropriate Engineering Controls:

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Avoid generating and inhaling dusts. Use in a well-ventilated area only. Keep containers in a well-ventilated area. Local exhaust ventilations system may be required, especially if chlorine gas evolved.

Personal Protective equipment - for manufacturing and bulk handling situations:

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

Skin Protection:	Suitable protective clothing should be worn e.g. cotton overalls and safety shoes. Wear gloves of impervious material such as nitrile rubber (glove thickness 0.11 mm & breakthrough time > 480 min) that comply with AS/NZS 2126. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken.
Eye Protection:	Tightly fitting safety goggles or full-faced shields as appropriate recommended and that comply with AS/NZS 1336 and 1337. Final choice of appropriate eye/face protection will vary according to individual circumstances i.e. methods of handling or engineering controls and according to risk assessments undertaken.
Respiratory Protection:	Respiratory protection is not normally necessary, unless the production of dust is significant and toxic gases evolved. In such cases, a suitable respirator may be worn that meets the requirements of AS/NZS 1715 and 1716.
Personal Hygiene:	Always wash hands after handling this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White to cream, granules	Vapour density:	No data found
Odour:	Chlorine	Relative density:	No data found
pH:	2.8 (1% solution)	Water solubility:	Triisochlorocyanuric acid: 12 g/L at 25°C Boric acid: 47.2 g/L at 25°C. Aluminium sulphide: completely. Copper sulphate pentahydrate: 230.5g/L at 25°C
Melting point / freezing point:	Triisochlorocyanuric acid: 246.7 °C (decomposes)	Partition coefficient n-octanol/water:	Triisochlorocyanuric acid: Log Kow 0.94. Boric acid: 0.175



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	Copper sulphate pentahydrate: > 110 °C. Aluminium sulphate: 770 °C (decomposes). Boric acid: 170.9°C Aluminium sulphide:		
Initial boiling point and boiling range:	Not applicable	Auto-ignition temperature:	Not applicable
Flash point:	Not flammable	Decomposition temperature:	Triisochlorocyanuric acid: >225 °C. Copper sulphate pentahydrate: 110 °C. Aluminium sulphate: 770 °C. Boric acid: 171 °C
Evaporation rate:	No data found	Viscosity:	Not applicable
Flammability:	Not flammable	Explosive properties:	Not explosive
Upper/lower flammability limits:	Not flammable	Oxidising properties:	GHS Cat 2 oxidiser
Vapour pressure:	Triisochlorocyanuric acid: Negligible. Boric acid: (2.14X10 ⁻⁴ Pa)	Corrosivity	Aluminum sulphide: metal corrosive

10. STABILITY AND REACTIVITY

Reactivity:	May react with water, acids, acyl halides, sulfonyl halides, and chloroformates oxidizing agents, strong halogenating agents. Hazardous decomposition products are Chlorine, Oxides of Carbon, Oxides of nitrogen,, boric anhydride and hydrogen.
Chemical Stability:	Rapidly decomposes on exposure to air. May decompose violently if exposed to heat or direct sunlight. Stable if stored and handled under recommended conditions.
Possibility of hazardous reactions:	A risk of explosion and/or of toxic gas formation exists with the following substances: Water, acids, acyl halides, sulfonyl halides, and chloroformates oxidizing agents, strong halogenating agents. May react with water releasing gaseous chlorine. If mixed with a small amount of water, the concentrated solution (with pH at about 2.0) may explode due to the evolution of unstable nitrogen trichloride. Heating may release sulphur oxides
Conditions to avoid:	Combustible substances, sources of ignition, open flame and heat. Other chemicals, foodstuffs and water.
Incompatible materials:	Acids, water, alkalis, calcium hypochlorite (dry or hydrated), carbonates, hydroxides, nitrogen compounds, sodium hypochlorite, reducing agents, ammonium compounds and oils and greases.



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11. TOXICOLOGICAL INFORMATION

No data available for the product. Information given is based on the components: triisochlorocyanuric acid (98% w/w), Copper sulphate pentahydrate (3%) aluminium sulphate (5-10%) and boric acid (1-5% w/w).

Acute Oral	Harmful if swallowed. Ingestion may cause Abdominal pain. Burning sensation. Shock or collapse. Triisochlorocyanuric acid: Oral LD ₅₀ (rat) = 406 mg/kg. Copper sulphate pentahydrate: Aluminum sulphate: no LD ₅₀ data found Boric acid: Oral LD ₅₀ (rat) = 2000- 4000 mg/kg
Acute Dermal	Triisochlorocyanuric acid: Dermal LD ₅₀ (rabbit) > 2000mg/kg. Aluminum sulphate: no LD ₅₀ data found. Boric acid: Dermal LD ₅₀ (rabbit) > 2000mg/kg.
Skin corrosion/irritation	May cause mild skin irritation/redness.
Serious eye damage/eye irritation	Causes burns and is a severe eye irritant.
Inhalation	Inhalation of dust may result in a cough, sore throat or laboured breathing. May irritate nose and mouth. Triisochlorocyanuric acid: LC ₅₀ Rat inhalation > 50 mg/L (1 hr). Boric acid: LC ₅₀ Rat inhalation > 0.16 mg/L
Respiratory or skin sensitisation	No data found for skin or respiratory sensitisation
Mutagenicity	Triisochlorocyanuric acid: Related substances were not mutagenic in studies designed to detect the potential to induce gene mutation, structural chromosome aberrations, or altered sister chromatid exchange frequency. Aluminium sulphate: negative in several in vitro investigations. Boric acid: No data found.
Reproduction/Development	No data found
Carcinogenicity	Triisochlorocyanuric acid: No data found. Boric acid Cancer Classification: Group E Evidence of Non-carcinogenicity for Humans (USEPA Office of Pesticide Programs). Aluminium sulphate not classifiable as a carcinogen.
Specific target organ toxicity - single exposure	Triisochlorocyanuric acid: May cause respiratory irritation. Boric acid: Eyes, skin, respiratory system, kidneys, CNS (In animals: testes). No data found for other components.
Specific target organ toxicity - repeated exposure	No data found
Aspiration hazard	Not applicable.



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12. ECOLOGICAL INFORMATION

No data available for the product. Information given is based on the triisochlorocyanuric acid (98% w/w) and boric acid (2% w/w).

Aquatic toxicity

Triisochlorocyanuric acid: lowest found LC₅₀ = 0.08 mg/L (Rainbow Trout), EC50 0.16 mg/L (*Daphnia magna*)

Boric acid: lowest found LC₅₀ = 22 mg/L (Channel catfish - *Ictalurus punctatus*)

Copper sulphate pentahydrate: lowest found LC₅₀ = 0.83 mg/L (Fathead minnow)

Aluminum Sulphate: lowest found LC₅₀ = 0.034 mg/L (Fathead minnow)

Persistence and degradability

Triisochlorocyanuric acid: The chloroisocyanurates ultimately degrade to cyanuric acid when used for bleaching, sanitizing, and disinfection applications. Cyanuric acid, has been shown to undergo biodegradation.

Other components: no data found.

Bioaccumulative potential:

Triisochlorocyanuric acid: Low potential. An estimated BCF of 3.1 was calculated using water solubility of 1.20x10⁴ mg/L.

Boric acid: Highly water soluble materials are unlikely to bioaccumulate. The octanol/water partition coefficient for boric acid measured as 0.175, indicating low bioaccumulation potential.

Other components: no data found.

Mobility in soil

Triisochlorocyanuric acid: The Koc is estimated as 25 using a water solubility of 1.20x10⁴ mg/L. This suggests that trichloroisocyanuric acid is expected to have very high mobility in soil.

Boric acid: Field studies have observed boron to leach readily in soil.

Copper sulphate pentahydrate: No data found

PBT identification:

This product is not identified as a PBT/vPvB substance.

Other adverse effects:

None known.

13. DISPOSAL CONSIDERATIONS

Disposal: Rinse empty containers in the pool and dispose of by wrapping with paper and putting in garbage. For larger quantities, refer to local government authority for disposal recommendations. Dispose of material through a licensed waste contractor. Leave chemicals

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in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

14. TRANSPORT INFORMATION

Consult the ADG 7.5, IMDG and ICAO/IATA Codes for all the transport requirements for the specified UN Number.

	Land Transport (ADG 7.5)	Sea Transport (IMDG)	Air Transport (ICAO/IATA)
UN Number	2468	2468	2468
UN proper shipping name	TRICHLOROISOCYANURIC ACID, DRY	TRICHLOROISOCYANURIC ACID, DRY	TRICHLOROISOCYANURIC ACID, DRY
Transport Hazard Class	5.1	5.1	5.1
Packaging Group	II or III (see ADG 7.5 for details)	II	II
Marine Pollutant		Yes	
Special Provisions*	TP33		

* See ADG 7.5 for details

15. REGULATORY INFORMATION

Poisons Standard (Scheduling):	Schedule 5
APVMA Product Number:	56071
Listing in the Australian Inventory of Chemical Substances (AICS)	Not applicable for APVMA registered products

16. OTHER INFORMATION

ADG	Australian Code for the Transport of Dangerous Goods by Road & Rail Edition 7.5, 2017
AS/NZS	Australian Standard/New Zealand Standard
CAS Number:	Unique Chemical Abstracts Service Registry Number
EC₅₀:	Ecotoxic Concentration 50% – concentration in water which is fatal to 50% of a test population (e.g. daphnia, fish species).
GHS:	Globally Harmonized System of classification and labelling of chemicals (GHS)
Hazchem Code:	Emergency action code of numbers and letters that provide information to emergency services, especially fire fighters



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HCIS:	Hazardous Chemical Information System (http://hcis.safeworkaustralia.gov.au/HazardousChemical)
IARC:	International Agency for Research on Cancer
LD₅₀:	Lethal Dose 50% – dose which is fatal to 50% of a test population (usually rats).
IDLH:	Immediately dangerous to life or health (IDLH) is defined by the US National Institute for Occupational Safety and Health (NIOSH)
LC₅₀:	Lethal Concentration 50% – concentration in air which is fatal to 50% of a test population.
NTP:	National Toxicology Program (USA)
SDS:	Safety Data Sheet
STEL:	Short term exposure limit (STEL) means the time-weighted average maximum airborne concentration of a substance calculated over a 15 minute period.
TWA:	8-hour Time-weighted average (TWA) means the maximum average airborne concentration of a substance when calculated over an eight-hour working day, for a five-day working week.
WES:	Workplace exposure standard
UN Number:	United Nations Dangerous Goods Number

References:

Work Safe Australia Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice (February 2016). The exposure standards comply with the New Zealand and Australian Workplace Exposure Standards for Airborne Contaminants. The Dangerous Goods Classification complies with the Australian Code for the Transport of Dangerous Goods by Road & Rail Edition 7.5, 2017. Other information from ChemIDPlus and linked databases. European Chemicals Agency Classification and Labelling database.

Sections Revised: All

Replaces revision: August 2016

Disclaimer

This Safety Data Sheet (SDS) has been prepared in compliance with the Work Safe Australia Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice (February 2016). The information in this SDS should be provided to all who will use, handle, store, transport, or otherwise be exposed to this product. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. HY-CLOR Australia Pty. Limited shall not be held liable for any damage resulting from handling or from contact with the above product.

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