Safety Data Sheet
HY-CLOR ALGAECIDE

REVIEWED: 26 FERUARY 2024
REPLACES: 19TH JUNE 2018
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1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name:	**HY-CLOR ALGAECIDE**
Chemical name:	Benzalkonium Chloride
Synonyms:	Quaternary Ammonium Compound, benzyl-C12-16-alkyldimethyl,chlorides; C12-16 alkyldimethylbenzylammonium chloride
Product Code:	HYCALG02-2 L, HYCALG05-5L, HYCALGAU1L06
Recommended Use of the Chemical and Restrictions on Use:	Algaecide for swimming pools.
Supplier:	HY-CLOR AUSTRALIA PTY LTD
Street Address:	178 Power Street Glendenning NSW 2761
Telephone Number: **After Hours:**	02 8805 2400 (Aus) 0404 859 515 (Aus)
Email:	help@hyclor.com.au
Emergency Telephone:	**Poisons Information Centre 131126 – 24 hours** **000 (Dial in case of transport emergency only)**

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

2. HAZARD IDENTIFICATION

This product is classified as a hazardous substance according to its GHS classification. This product is an Environmentally Hazardous Substance - meeting the description of a Class 8 corrosive substance (UN 1760) with sub-class 9 environmentally hazardous liquid). However, it is not subject to the provisions of the Australian Code for the Transport of Dangerous Goods by Road and Rail when transported in packagings that do not incorporate a receptacle exceeding 500 kg(L); or (b) IBCs. (ADG 7.8 SP AU01)

Poisons Schedule: S5. SIGNAL WORD: CAUTION

GHS Hazard Statement(s)

GHS Category and Hazard Statement(s) – as listed in HCIS

Acute toxicity (ingestion) category 4	**H302**	Harmful if swallowed
Acute toxicity (dermal) category 4	**H312**	Harmful in contact with skin
Acute toxicity (inhalation) Category 1	**H330**	Fatal if inhaled
Skin corrosion irritation – category 1B	**H314**	Causes severe skin burns and eye damage
	AUH071	Corrosive to respiratory tract
Hazardous to the aquatic environment (acute) – category 1	**H400**	Very Toxic to aquatic life
Hazardous to the aquatic environment (chronic) – category 1	**H410**	Very Toxic to aquatic life with long lasting effects

Precautionary statements

Prevention:
P260: Do not breathe mists.
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.
P284: [In case of inadequate ventilation] wear respiratory protection.
P280: Wear protective gloves/ eye protection/ face protection.
P273: Avoid release to the environment. - if this is not the intended use.

Response:

P301+P312: IF SWALLOWED: Call a POISON CENTER/doctor/ if you feel unwell.

P330: Rinse mouth

P302+P352: IF ON SKIN: Wash with plenty of water.

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

P362+P364: Take off contaminated clothing and wash it 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/doctor/

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 or shower.

P363: Wash contaminated clothing before reuse.

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.

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 regulations

Hazard pictograms

GHS 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.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	CAS Number	Concentration (% w/w)
Benzalkonium Chloride	68424-85-1	15
Dye		< 0.1
Non-hazardous ingredient		Balance

4. FIRST AID MEASURES

For advice, 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. Wash out mouth with water and give plenty of water to drink. Seek medical attention.

Skin: 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 contact with the eye(s) occurs, or if eye irritation arises, wash with copious amounts of water holding eyelid(s) open. 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 develop seek medical attention.

Note to Physician Treat symptomatically

5. FIRE FIGHTING MEASURES

Suitable extinguishing media: Water spray, alcohol foam, dry chemical or carbon dioxide extinguishers

Special hazards arising from the chemical: Carbon monoxide (in conditions of incomplete combustion), carbon dioxide, nitrogen oxides and hydrogen chloride may be produced if water in the product boils off.

Special protective equipment and precautions for fire firefighters: The product is non flammable. However, after evaporation of water in the product, the residue may be combustible. In confined areas or areas of excessive

smoke, fire fighter must wear full protection and self-contained breathing apparatus.

Hazchem Code: **2X HIN 80**

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedure	This product is sold in small packages, and the accidental release from one of these is not usually a cause for concern. Wear personal protective equipment as described in Section 8. Slippery when spilt.
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, contain and absorb with inert materials (sand, earth), sweep up, place contaminated material in a sealed container and place in garbage. Wash area down with excess water.

7. HANDLING AND STORAGE

Precautions for safe handling	Avoid skin and eye contact and breathing in vapour, mists and aerosols.
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. Store away from incompatible materials described in Section 10.

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.

Exposure controls

Appropriate Engineering Controls: Eye wash bottle or emergency eye-wash fountain must be found in the work place.

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.

Clothing:	Wear overalls clothing including chemical resistant apron where clothing is likely to be contaminated.
Skin Protection:	Wear gloves of impervious material such as PVC, neoprene or nitrile. 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. 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 mists is significant. In such cases, a suitable respirator may be worn that meets the requirements of AS/NZS 1715 and AS/NZS 1716.
Personal Hygiene:	Always wash hands after handling this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light Blue Liquid	**Vapour density:**	No data found
Odour:	None	**Relative density:**	1.0 at 20°C
pH:	7-7.5 at 1%	**Water solubility:**	Completely soluble
Melting point / freezing point:	Not applicable	**Partition coefficient n-octanol/water:**	Not applicable, inorganic compound

Initial boiling point and boiling range:	~ 100°C	**Auto-ignition temperature:**	Not applicable
Flash point:	Not flammable	**Decomposition temperature:**	No data found
Evaporation rate:	No data found	**Viscosity:**	No data found
Flammability:	Not flammable	**Explosive properties:**	Not explosive
Upper/lower flammability limits:	Not flammable	**Oxidising properties:**	Not an oxidiser
Vapour pressure:	No data found		

10. STABILITY AND REACTIVITY

Reactivity:	This product is stable
Chemical Stability:	This product is stable and unlikely to react or decompose under normal circumstances.
Possibility of hazardous reactions:	Hazardous reactions will not occur under normal transport or storage conditions. Decomposition may occur on exposure to conditions or materials listed below. Under fire conditions this product may emit carbon monoxide (in conditions of incomplete combustion), carbon dioxide, nitrogen oxides and hydrogen chloride may be produced if water in the product boils off.
Conditions to avoid:	Extremes of temperature and direct sunlight.
Incompatible materials:	Strong oxidising agents. Strong acids.

11. TOXICOLOGICAL INFORMATION

No data available for the product. Information given is based on the benzalkonium chloride (C_{12}-C_{16} alkyl dimethyl benzyl ammonium chloride) component.

Acute Oral	Swallowing may result in soreness and redness of the mouth and throat. Nausea and stomach pain may occur. There may be vomiting. Oral LD_{50} (rat): 426 mg/kg. Product Oral LD_{50} by GHS mixture calculation 2840 mg/kg.
Acute Dermal	Dermal LD_{50} (rat): 1420 mg/kg. Product Dermal LD_{50} by GHS mixture calculation > 5000 mg/kg

Skin corrosion/irritation	Contact with skin may result in severe irritation.
Serious eye damage/eye irritation	May cause irreversible eye damage.
Inhalation	May be fatal if inhaled. Corrosive to respiratory tract.
Respiratory or skin sensitisation	Inhalation of mist may result in respiratory irritation. Not considered a skin sensitiser
Mutagenicity	Not mutagenic or genotoxic
Reproduction/Development	No data found
Carcinogenicity	Not carcinogenic based on rat and mice studies
Specific target organ toxicity - single exposure	Highly active in causing hemolysis of rabbit erythrocytes
Specific target organ toxicity - repeated exposure	No data found
Aspiration hazard	No data found

12. ECOLOGICAL INFORMATION

No data available for the product. Information given is based on the benzalkonium chloride (C_{12}-C_{16} alkyl dimethyl benzyl ammonium chloride) component.

Aquatic toxicity	Algae 96H ErC_{50}: 0.06 mg/L Daphnia 48H EC_{50}: 0.02 mg/L Fish 96H LC_{50}: 0.85 – 1.2 mg/L
Persistence and degradability	Readily biodegradable. If released to water and the environment biodegradation is expected to occur. If released into water, based on the Koc it is expected to adsorb to suspended solids and sediments.
Bioaccumulative potential:	No data found
Mobility in soil	None expected based on an estimated Koc of $9x10^{-5}$
PBT identification:	This product is not identified as a PBT/vPvB substance.
Other adverse effects:	Toxic to soil organisms.

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 Refer to local government authority for disposal recommendations. Dispose of material through a licensed waste contractor. Normally suitable for disposal at approved land waste site..

14. TRANSPORT INFORMATION

Consult the ADG 7.8 IMDG and ICAO/IATA Codes for all the transport requirements for the specified UN Number.

UN 3082 is not subject to the provisions of the Australian Code for the Transport of Dangerous Goods by Road and Rail when transported in not exceeding 500 kg. (ADG 7.8 SP AU01)

	Land Transport (ADG 7.8)	**Sea Transport (IMDG)***	**Air Transport (ICAO/IATA)***
UN Number	1760	1760	1760
UN proper shipping name	Corrosive Liquid, N.O.S. (benzalkonium chloride)	Corrosive Liquid, N.O.S. (benzalkonium chloride)	Corrosive Liquid, N.O.S. (benzalkonium chloride)
Transport Hazard Class	8	8	8
Hazard sub class	9 (UN3082)	9 (UN3082)	9 (UN3082)
Packaging Group	I, II or III (see ADG 7.8 for details	II	II
Marine Pollutant		Yes	Yes

'* Consult IMDG Code for sea transport and ICAO/IATA Code for air transport provisions and instructions.

Hazchem Code: 2X HIN 80

15. REGULATORY INFORMATION

Poisons Standard (Scheduling):	Schedule 5 (containing ≤ 20% quaternary ammonium compounds)
APVMA Product Number:	66276
Listing in the Australian Inventory of Chemical Substances (AICS)	Listed as Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl,chlorides. Synonym: benzyl-C - alkyldimethylammonium chlorides

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
EC_{50}:	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
HCIS:	Hazardous Chemical Information System (http://hcis.safeworkaustralia.gov.au/HazardousChemical)
IARC:	International Agency for Research on Cancer
LD_{50}:	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)
LC_{50}:	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 (June 2023). The exposure standards comply with the 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 7.8, 2022. Other information from ChemIDPlus and linked databases and the European Chemicals Agency Classification and Labelling database. SDS for components,

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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 (June 2023). 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.