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SAFETY DATA SHEET – BENZALKONIUM CHLORIDE

1. IDENTIFICATION

Revision Date	July 2023 (*valid for 5 years from this date)*
Product Name	BENZALKONIUM CHLORIDE
Other Names	QUATERNARY AMMONIUM COMPOUND
Uses	Biocide
Contact Information	Chlorine Discounters Address: 43 Clapham Road, Regents Park NSW 2143 P: 02-96454433 F: 02-96454030 E: info@chlorinediscounters.com.au W: www.chlorinediscounters.com.au
Emergency Contact	Managing Director or Operations Manager

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)	6
Globally Harmonised System	
Hazard Classification	Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
Hazard Categories	Acute Toxicity (Oral) - Category 4 Acute Toxicity (Dermal) - Category 4 Acute Toxicity (Inhalation) - Category 4 Skin Corrosion/Irritation - Category 1B Acute Hazard To The Aquatic Environment - Category 1
Pictograms	
Signal Word	Danger

Hazard Statements	H302	Harmful if swallowed.
	H312	Harmful in contact with skin.
	H314	Causes severe skin burns and eye damage.
	H332	Harmful if inhaled.
	H400	Very toxic to aquatic life.
Precautionary Statements		
Prevention	P260	Do not breathe fume/gas/mist/vapours/spray.
	P264	Wash hands and contaminated body thoroughly after handling.
	P270	Do not eat, drink or smoke when using this product.
	P271	Use only outdoors or in a well-ventilated area.
	P273	Avoid release to the environment.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
Response	P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
	P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
	P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
	P303 + P361 + P353	IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
	P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position 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 or doctor/physician.
	P312	Call a POISON CENTER or doctor/physician if you feel unwell.
	P321	Specific treatment (see First Aid Measures on Safety Data Sheet).
	P322	Specific measures (see supplemental first aid instructions on this label).
	P330	Rinse mouth.
	P363	Wash contaminated clothing before reuse.
Storage	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)
Dangerous Goods Classification		Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	CAS Number	Proportions (%)
N-ALKYL DIMETHYLBENZYL AMMONIUM CHLORIDE	[8001-54-5]	>50
Methyl Alcohol	[67-66-1]	>1
WATER	[7732-18-5]	BALANCE

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed — If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Eye — Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Take care not to rinse contaminated water into the non-affected eye. Seek immediate medical attention. Check for and remove any contact lenses if safe to do so.

Skin — In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately. Serious Skin Contact: Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhaled — Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Advice to Doctor — Treat symptomatically based on judgement of doctor and individual reactions of patient.

Medical Conditions Aggravated by Exposure — No information available on medical conditions aggravated by exposure to this product.

5. FIRE FIGHTING MEASURES

General Measures — If safe to do so, remove containers from the path of fire.

Flammability Conditions — Corrosive liquid.

Extinguishing Media — In case of fire, use appropriate extinguishing media most suitable for surrounding fire conditions.

Fire and Explosion Hazard — Product is a not a flammable liquid.

Hazardous Products of Combustion — Hazardous decomposition products may include noxious and toxic fumes of carbon monoxide and carbon dioxide.

Special Fire Fighting Instructions	Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk. Do NOT allow fire fighting water to reach waterways, drains or sewers. Store fire fighting water for treatment.
Personal Protective Equipment	Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves) or chemical splash suit. Please note: Structural fire fighters uniform will provide limited protection.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	2X

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Avoid accidents, clean up immediately. May be slippery when spilt. Eliminate all sources of ignition. Increase ventilation. Isolate the danger area. Use clean, non-sparking tools and equipment. Shut off all possible sources if ignition.
Clean up Procedures	Small Spill: Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. Flammable liquid. Corrosive liquid. Poisonous liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Use water spray curtain to divert vapour drift. Use water spray to reduce vapours. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.
Containment	Stop leak if safe to do so.
Environmental Precautionary Measures	Do not allow product to reach drains, sewers or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Authority.
Evacuation Criteria	Evacuate all unnecessary personnel.
Personal Precautionary Measures	Personnel involved in the clean-up should wear full protective clothing as listed in section 8.

7. HANDLING AND STORAGE

Handling	Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product vapours. Avoid prolonged or repeated exposure. Operations should be carried out in an efficient fume hood or equivalent system. Remove contaminated clothing and wash before reuse. Discard contaminated shoes. Keep away from combustible material. Empty containers pose a fire risk, evaporate residue under a fume hood. Chemicals should be used only by those trained in handling potentially hazardous materials.

Storage	Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in section 10. Do not store above 25 Deg C. This product has a UN classification of 3265 and a Dangerous Goods Class 8 (Corrosive) according to The Australian Code for the Transport of Dangerous goods By Road and Rail.
Container	Container type/packaging must comply with all applicable local legislation. Store in original packaging as approved by manufacturer.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No exposure standard has been established for this product by the Safe Work Australia (SWA). methyl alcohol 200 Proof TWA: 1000 (ppm) from ACGIH (TLV) [United States] [1999] TWA: 1000 (ppm) from OSHA (PEL) [United States] TWA: 1900 (mg/m3) from OSHA (PEL) [United States] TWA: 1000 (ppm) from NIOSH TWA: 1000 (ppm) [United Kingdom (UK)] TWA: 1920 (mg/m3) [United Kingdom (UK)] TWA: 1000 STEL: 1250 (ppm) [Canada]Consult local authorities for acceptable exposure limits.
Exposure Limits	No Data Available
Biological Limits	No information available on biological limit values for this product.
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. Adequate ventilation should be provided so that exposure limits are not exceeded.
Personal Protection Equipment	RESPIRATOR: Vapour respirator, A self-containedbreathing apparatus should be used to avoid inhalation of the product (AS1715/1716). EYES: Splash goggles (AS1336/1337). HANDS: Wear impervious protective gloves (AS2161). CLOTHING: Flame-retardant coveralls and anti-static footwear (AS3765/2210).
Work Hygienic Practices	No Data Available

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Liquid
Odour	Little smell of alcohol
Colour	Colorless or pale yellow transparent
pH	5 - 6 1% solution
Vapour Pressure	<40mmHg (@ 19 °C)
Boiling Point	No Data Available
Specific Gravity	0.96
Flash Point	No Data Available
Solubility	Miscible in water at any proportions

Decomposition Temperature	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Additional Characteristics	Non-corrosive in presence of glass.
Release of Invisible Flammable Vapours and Gases	No Data Available
Melting Point	-5 °C
Evaporation Rate	No Data Available

10. STABILITY AND REACTIVITY

General Information	Corrosive Liquid.
Chemical Stability	Product is stable under normal conditions of use, storage and temperature.
Conditions to Avoid	Excess heat, ignition sources, incompatible materials.
Materials to Avoid	Reactive with oxidizing agents. Slightly reactive to reactive with acids, alkalis. Hygroscopic. Also incompatible with nitrates, anion detergents (Benzalkonium chloride).
Hazardous Decomposition Products	Hazardous decomposition products may include noxious and toxic fumes of carbon monoxide and carbon dioxide.
Hazardous Polymerisation	Hazardous Polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	Toxicity to Animals: Acute oral toxicity (LD50): 240 mg/kg [Rat]. (Benzalkonium chloride). Special Remarks on Chronic Effects on Humans: May affect genetic material (mutagen) and cause adverse reproductive effects (fetotoxicity, fertility (female)) based on laboratory experiments on animals. (Benzalkonium chloride).
Ingestion	Harmful if swallowed. Causes gastrointestinal/digestive tract irritation and burns. May affect behaviour (central nervous system depression, depression) and metabolism. May produce burning pains in the mouth, throat, and abdomen, profuse salivation and muscle weakness. May also affect the respiratory system and cardiovascular system, liver and kidneys.
Inhalation	Harmful if inhaled (lung corrosive). May cause respiratory tract and mucous membrane irritation with sore throat, coughing, shortness of breath, and delayed lung oedema. May cause chemical burns to the respiratory tract. High vapour concentrations may cause nervous system effects. Chronic Potential Health Effects: May affect material (mutagenic) and may cause adverse reproductive effects.
Skin Irritant	Harmful in contact with skin (corrosive). Causes severe skin burns. Prolonged or repeated skin contact may cause dermatitis. Repeated or prolonged exposure may cause allergic reactions in sensitive individuals. May cause cyanosis of the skin and lips caused by lack of oxygen.
Eye Irritant	Very hazardous in case of eye contact (corrosive), Causes severe skin burns and eye damage.
Carcinogen Category	No Data Available

12. ECOLOGICAL INFORMATION

Eco-toxicity	Highly toxic to fish (LC50 = 280 µg ai/L), or 0.560 mg/L as 50% quat. Very highly toxic to aquatic invertebrates (LC50 = 5.9 µg ai/L), or 0.12 mg/L as 50% quat. Moderately toxic to birds (LD50 = 136 mg/kg-bw), and slightly toxic to mammals (LD50 = 430 mg/kg-bw). Based on literature search, Q50 - Dodecyl Dimethyl Benzyl Ammonium Chloride 50% is classified as readily biodegradable under the conditions of OECD test 301D (closed bottle test). Reference is "Re-registration Eligibility Decision for Alkyl Dimethyl Benzyl Ammonium Chloride (ADBAC) US EPA-739-R-06-009 August 2006".
Persistence/Degradability	Mobility No information available on mobility for this product.
Environmental Fate	Do NOT let product reach waterways, drains and sewers.
Bioaccumulation Potential	Not available.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of in accordance with all local, state and federal regulations. All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility.
Special Precautions for Land Fill	Contact a specialist disposal company or the local waste regulator for advice.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

UN Number	1760
Shipping Name	CORROSIVE LIQUID, N.O.S.(BENZALKONIUM CHLORIDE)
Dangerous Goods Class	8 Corrosive Substance
Subsidiary Risk	Not applicable.
Pack Group	II
Precaution for User	IRRITANT
Hazchem Code	2X
EPG	37 TOXIC AND/OR CORROSIVE SUBSTANCES Non-Combustible
Special Provision	Not applicable.



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	No Data Available
Poisons Schedule (Aust)	6
National/Regional Inventories	
Australia (AICS)	Listed

16. OTHER INFORMATION

Literature References	No data available.
Sources for Data	No data available.

Legend to Abbreviations and Acronyms

<	less than
<	greater than
ADG	Australian Dangerous Goods Code
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstracts Service (Registry Number)
cm2	square centimetres
CO2	Carbon Dioxide
COD	Chemical Oxygen Demand
deg C ('C)	degrees Celsius
ERMA	Environmental Risk Management Authority
g	gram
g/cm3	grams per cubic centimetre
g/l	grams per litre
HSNO	Hazardous Substance and New Organism
IATA	International Air Transport Association Dangerous Goods Regulations
IDLH	Immediately Dangerous to Life and Health
IMDG	International Maritime Dangerous Goods Code
Immiscible	liquids are insoluble in each other
Kg	kilogram

kg/m3	kilograms per cubic metre
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
ltr	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	miscible
Miscible	liquids form one homogeneous liquid phase regardless of the amount of either component present
mm	millimetre
mPa.s	milli Pascal per second
N/A	Not Applicable
NOHSC	National Occupational Health and Safety Commission
OECD	Organization for Economic Co-operation and Development
PEL	Permissible Exposure Limit
Ppb	parts per billion
ppm	parts per million
ppm/2h	parts per million per 2 hours
ppm/6h	parts per million per 6 hours
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 (number)
wt	weight

This SDS summarises Chlorine Discounters best knowledge of the health and safety hazard information of the selected substance and how to safely handle the selected substance in the workplace however Chlorine Discounters expressly disclaims that the SDS is a representation or guarantee of the chemical specifications for the substance.

Each user should read the SDS and consider the information in the context of how the selected substance will be handled and used in the workplace including its use in conjunction with other substances.