

Material Safety Data Sheet

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1. Identification of the material/supplier

Product Name: Virukill®
Other names: Didecyldimethylammonium chloride
Recommended Use: Broad Spectrum Disinfectant.
Supplier: ICA International Chemicals (Pty) Ltd
Address: 28 Planken Street
 Plankenbrug Industrial
 STELLENBOSCH · 7600 · SOUTH AFRICA
Telephone No.: +27 (0) 21 886 9812
Fax No.: +27 (0) 21 886 8209
Emergency Tel No.: Griffon Poison Information Centre +27 82 446 8946
 Poisons Helpline 0861 555 777

2. Hazard Identification

Hazard: HAZARDOUS SUBSTANCE. NON-DANGEROUS GOOD
Hazard Symbol: Xn Harmful
 C Corrosive (to the eye)
Risk Phrases: R22 Harmful if swallowed.
 R34/41 Causes burns (to the eyes). Risk of serious damage to eyes.
 R37/38 Irritating to respiratory system and skin.
Safety Phrases: S2 Keep out of reach of children
 S25/26 Avoid contact with eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 Wear eye protection.
 S37/39 Wear suitable gloves and eye/face protection.
 S38 In case of insufficient ventilation, wear suitable respiratory equipment.
 S45 In case of feeling unwell, seek medical advice.

3. Composition/information on ingredients

INGREDIENT(s)	CAS NO.:	Hazardous Classification for ACTIVE INGREDIENT (EU standards)	Proportion
N,N-Didecyl-N,N-dimethyl ammonium chloride (DDAC)	7173-51-5	Cut-Off: >=10% Conc <25%: C; R34; Classification: Xn; R22 C; R34 Labelling: C; R: 22 – 34 S: (2); 26 – 36/37 -38 -45	12%
Other components		Strictly confidential	Fill to 100%

4. FIRST AID MEASURES

Show this MATERIAL SAFETY DATA SHEET to a doctor.

INHALATION: If experiencing respiratory symptoms (irritation, difficulty with breathing), remove person to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. Call for medical assistance.
EYES: Rinse eyes IMMEDIATELY with clean water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing while holding eyelids apart. Immediately seek medical assistance.
SKIN: Remove contaminated clothing. Rinse affected areas (skin) immediately with plenty of water/shower. Wash contaminated clothing before re-use.
INGESTION: If swallowed, DO NOT induce vomiting. Immediately give 3-4 glasses of milk (if unavailable, give water). Never give anything to an unconscious person. Rinse mouth with water. If vomiting does occur, keep on giving fluids. Get medical attention. Possible mucosal damage may contra-indicate the use of gastric lavage.

5. FIRE FIGHTING MEASURES:

SMALL FIRES: Dry chemical, CO₂, water spray or alcohol-resistant foam.

LARGE FIRES: Apply water in large quantities (flooding). Keep unopened containers exposed to the fire cool with spraying water on it.

Hazards from strong combustion products: Not known.

Precautions for fire fighters and special protective equipment: Fire fighters should wear full protective gear including self-contained breathing apparatus.

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6. ACCIDENTAL RELEASE MEASURES:

SPILL OR LEAK:

- Avoid breathing vapours or mist. Floors may become very slippery.
- PREVENT spilled concentrated product from entering drains or sewer systems. Dike and bund area with sand or earth to prevent contamination of drains or sewers.
- Simplest method of disposal involves dilution to low concentrations in order to allow the biocide to degrade naturally (only if permitted by regulatory authorities). At levels below 10 parts per million (active), no detrimental effects on functioning waste treatment systems of the environment have been noted.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING

- Use in well ventilated area and AVOID inhalation of spray mist. Wear suitable respiratory equipment.
- Product is poisonous when swallowed. Always store pesticides in their original containers, which include the label listing ingredients, directions for use, and first aid steps in case of accidental poisoning. **Never transfer** pesticides to soft drink bottles or other containers. Children or others may mistake them for something to eat or drink.
- Keep out of reach of children
- Wear suitable protective clothing;
- Wear suitable gloves to prevent skin irritation.
- In case of **insufficient ventilation**, wear suitable respiratory equipment.
- Wear eye/face protection to **avoid contact with eyes**.
- DO NOT keep or store for prolonged periods in direct sunlight.
- Wash hands, arms and face after use. Wash gloves and contaminated protective clothing daily.

CONDITIONS FOR SAFE STORAGE

- DO NOT re-use the container for any other purpose.
- Use plastic containers. Avoid metal.
- Store in the closed original container in a cool, dry and well ventilated, secure area. Do not store in direct sunlight. Keep away from children, animals, food, and seed.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

NATIONAL EXPOSURE STANDARDS:

No emission limits allocated.

BIOLOGICAL LIMIT VALUES:

No biological limit allocated.

ENGINEERING CONTROLS:

Provide proper ventilation to minimise exposure. If mists or vapours are generated, their concentration in the workplace air should be controlled to the lowest reasonable practicable level. Facilities should be equipped with an eyewash facility and a safety shower.

PERSONAL PROTECTIVE EQUIPMENT:

EYES: Wear chemical safety glasses with side shield or face shield.
GLOVES: Wear rubber gloves to prevent skin contact.
RESPIRATORY: If inhalation of vapour is likely to occur wear an approved respirator/disposable fume mask/dust mask. Use in well ventilated area ONLY. In case of **insufficient ventilation**, wear suitable respiratory equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Homogenous, clear, colourless, foaming liquid

ODOUR: Slight bitter smell. Bitter taste.

pH: 5 - 8

STABILITY: Stable at normal conditions (OECD 113)

SURFACE TENSION: 36.1 mN/m (OECD 115)

MISCIBILITY: Standard water, acetone and ethanol at 30°C - no solid material separation; no separation into layers.

CORROSION (METALS): **NON-CORROSIVE TO METALS**

Aluminium, copper, carbon steel and brass = >0.08mm/year. (ASTM G31-72)

SOLUBILITY IN WATER: Freely soluble

SPECIFIC GRAVITY / DENSITY: ~1kg/L at 20°C (IP 365)

FLASH POINT: ASTM D93 = 92,0°C (Pensky Martens Closed Cup)

VOLATILITY: non volatile matter, (% m/m) = 14,66 (SABS)

FLAMMABILITY: Not Flammable

VISCOSITY: 70,4 at 25°C (Brookfield viscosity, speed 100, spindle 2)

FOAM PERSISTENCE: (200 ml/100L) in 100ml emulsion: Hardwater 1 min = 104mL; Hard water 5 min = 88mL

COMPATABILITY: Not compatible with concentrated anionic compounds

OXIDISING PROPERTIES: Not an oxidising substance.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal conditions. Tolerant of both acidic and alkaline medium (pH 3.5 - 9)

CONDITIONS TO AVOID: Do not store at high temperatures for long periods of time. Keep containers closed when not in use.

INCOMPATIBLE MATERIALS: Strong oxidising or reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: The substance decomposes on burning producing toxic fumes of nitrogen oxides and chloride.

11. TOXICOLOGICAL INFORMATION

ANIMAL ACUTE TOXICITY DATA (PRODUCT)

ORAL: LD ₅₀ (rat)	>4000mg/kg
DERMAL: LD ₅₀ (rabbit)	>2000mg/kg
INHALATION: LC ₅₀ rat	0.161 mg/L air – can cause irritation and damage to mucosal surface.
DERMAL IRRITATION: (OECD 404)	Irritating to skin
EYE IRRITATION: (OECD 405)	Risk of serious damage to eyes
SENSITISATION: Guinea pig	Not a skin sensitizer
CHRONIC TOXICITY: Oral dog	1 year – no target organs effects
PHARMACOKINETICS: Dog	This material does not accumulate in body tissues.
MUTAGENICITY:	Non-teratogenic, non-carcinogenic, non mutagenic

12. ECOLOGICAL INFORMATION:

ECOTOXICITY:	Fish: Moderate toxic to aquatic organisms. Active ingredient: LC ₅₀ (96hr) – 1mg/L (salmon) Active ingredient: EC ₅₀ (48hr) – 0.94mg/L (<i>Daphnia magna</i>)
	Bees: Not toxic to bees. Acute contact (product) LD ₅₀ > 100g a.i./bee (<i>Apis mellifera</i>)
	Birds: Not hazardous to birds. Active Dietary LC ₅₀ Oral > 5.620ppm (bobwhite quail and mallard ducks)
PERSISTENCE & DEGRADABILITY:	DDAC is biodegradable in sewage and natural water systems.
MOBILITY:	Immobile in soil.

13. DISPOSAL CONSIDERATIONS:

Do not use fungicide containers or packaging material for storing water or food. Triple or preferable pressure rinse empty containers with clean water before disposal. Add rinsing to spray/mixing tank. Do not dispose of undiluted chemical on-site. If recycling, replace cap and return clean containers to recycler or designated collection point. IF NOT recycling, break crush or puncture and bury empty containers in a local authority landfill. If no landfill is available bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of any water source (river, dam, spring, or borehole). Empty containers and product should not be burnt.

14. TRANSPORT INFORMATION:

UN NUMBER:	NOT a Dangerous Good (No UN number allocated: According to the Australian Code for The Transport of Dangerous Goods and South African Authorities)
PROPER SHIPPING NAME:	Non allocated (According to UN Number)
PACKING GROUP:	III (minor danger)
HAZARD WARNING:	Non allocated (According to UN Number)

15. REGULATORY INFORMATION:

Hazard Symbol(s):



Corrosive(to the eye)



16. OTHER INFORMATION

This information concerns only the product conforming to its specifications and limits to the uses herein stated. This sheet complements the technical sheet of use but does not replace it. The information contained on this sheet is based on knowledge of the product on date of publication. It is given in good faith.

The data does not signify any warranty with regard to the product properties. This Material Safety Data Sheet (MSDS) summarises to our best knowledge the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how to prevent accidents in the normal workplace including in conjunction with other products. Care for the environment is essential for our future.

Abbreviations and Acronyms:

ADG:	Australian Dangerous Goods Code, Rail & road 6 th edition
CAS Number:	Chemical Abstract Service Registry Number
NOHSC:	National Occupational Health and Safety Commission

END of MSDS

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