

SAFETY DATA SHEET

Issue No: 3.3	Revision date: 11 April 2023 First print date: 30 September 2010
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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name:	VIRUKILL®
Other means of identification:	Didecyltrimethylammonium Chloride (DDAC)
Recommended Use:	Disinfectant
Supplier:	ICA International Chemicals (Pty) Ltd
Address:	28 Planken Street Plankenbrug Industrial STELLENBOSCH · 7600 · SOUTH AFRICA
Telephone No:	+27-21 886 9812
Fax No:	+27-21 886 8209
Emergency Tel No:	Griffon Poison Information Centre: +27-82 446 8946 Human Poison Helpline: +27-861 555 777

2 HAZARD IDENTIFICATION

GHS Classification of product	Combustible liquid – Category 4 Acute Toxicity Oral – Category 5 Acute Toxicity Dermal – Category 5 Acute Inhalation – Category 4 Skin Corrosion/Irritation – Category 2 Eye damage/Irritation – Category 1 Acute Aquatic Toxicity – Category 1 Chronic Aquatic Toxicity – Category 3
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GHS Label elements

GHS for Classification and Labelling of Chemicals (GHS) Rev 9, 2021; Regulation EC 1272/2008 [EU-GHS/CLP]



Signal word

DANGER

Hazard Statements

H227 – Combustible liquid.
H303 – May be harmful if swallowed.
H313 – May be harmful in contact with skin.
H315 – Causes skin irritation.
H318 – Causes serious eye damage.
H332 – Harmful if inhaled.
H410 – Very toxic to aquatic life with long lasting effects.

General Precautionary Statements

P101: If medical advice is needed, have product container or label at hand.
P102: Keep out of reach of children.
P103: Read carefully and follow all instructions.

Prevention Precautionary Statements

P210: Keep away from heat, hot surface, sparks, open flames and other ignition sources. No smoking.
P261: Avoid breathing mist and spray.
P264 + P265: Wash hands and face thoroughly after handling. Do not touch eyes.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.

Response Precautionary Statements

P301+P317: IF SWALLOWED: Get medical help.

P302 + P317: IF ON SKIN: Get medical help.
 P302 + P352: IF ON SKIN: Wash with plenty of water.
 P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P305 + P354 + P338: IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
 P321: Do NOT induce vomiting.
 P332 + P317: If skin irritation occurs: Get medical help.
 P362 + P364: Take off contaminated clothing and wash it before reuse.
 P370 + P378: In case of fire: Use dry chemical, CO₂, water spray or alcohol-resistant foam. to extinguish.
 P391: Collect spillage.
 P403: Store in a well-ventilated place.
 P501: Dispose of contents and container in accordance with national regulations.

Storage Precautionary Statements

Disposal Precautionary Statements

3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT(S)	CAS NO:	CONCENTRATION % (w/v)	CLASSIFICATION EC1272/2008
Didecyldimethylammonium Chloride	7173-51-5	12	Acute Oral Toxicity Category 4, H302 Skin Corrosion Category 1B, H314
Isotridecanol, ethoxylated	69011-36-5	< 10	Aquatic Acute Category 1, H400 Aquatic Chronic Category 3, H412
Ethanol	64-17-5	< 10	Flammable Liquid Category 2, H225

There are no additional ingredients present which, within the current knowledge of the provider of this SDS, and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. See section 16 for legend of additional H-statements not mentioned in section 2.

4. FIRST AID MEASURES

Show this SAFETY DATA SHEET to a doctor.

INHALATION:

- Can cause respiratory corrosion/irritation. Remove the victim from immediate source of exposure. Move victim to fresh air, if it can be done safely, and keep comfortable.
- If victim's breathing has stopped, perform artificial respiration.
- DO NOT perform mouth-to-mouth resuscitation if victim ingested or inhaled the substance; wash face and mouth before giving artificial respiration. Use a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- Administer oxygen if victim's breathing is difficult or irregular.
- Get medical help.

SKIN:

- Can cause skin irritation. Remove and isolate contaminated clothing, shoes, and leather goods immediately and take a shower.
- Rinse affected areas (skin) immediately with non-abrasive soap or mild detergent and large amounts of running water. Wash contaminated clothing before reuse.
- Get medical help if irritation develops and persists.

EYES:

- Can cause severe eye damage, burning of eyes. Rinse eyes IMMEDIATELY with clean running water for at least 15 minutes, while holding eyelids apart.
- Remove contact lenses after 5 minutes if present and easy to do.
- Continue rinsing while holding eyelids apart.
- Seek medical help if irritation continues.

INGESTION:

- If swallowed, DO NOT induce vomiting, unless instructed to do so by poison control center or doctor.
- Have person sip a glass of water if able to swallow
- Never give anything by mouth to an unconscious person.
- If vomiting does occur, keep on giving fluids. Get medical help.

NOTE TO PHYSICIAN:

- There is no specific antidote. All treatments should be based on observed signs and symptoms of distress in the patient.

POTENTIAL HEALTH EFFECTS, ACUTE AND DELAYED · Effects of exposure (inhalation, ingestion, or skin contact) to substance may be delayed.

5. FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA:	Small fires: Dry chemical powder, carbon dioxide (CO ₂), water spray or alcohol-resistant foam Large fires: Water spray, fog, or alcohol-resistant foam
FIRE INVOLVING TANKS:	Cool containers with flooding quantities of water until well after fire is out. DO NOT get water inside containers. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Always stay away from tanks engulfed in fire.
UNSUITABLE EXTINGUISHING MEDIA:	DO NOT use high volume water jet, due to contamination risk.
SPECIFIC EXTINGUISHING METHODS:	Fight fire from maximum distance. For massive fire, use unmanned hose holder or monitor nozzles. Collect contaminated extinguishing water separately; do not allow contaminated water to reach the sewage or effluent systems.
SPECIFIC HAZARDS ARISING FROM COMBUSTION PRODUCTS:	In case of fire, the formation of very toxic fumes of /nitrogen oxides, ammonia, and hydrogen chloride can be expected.
PRECAUTIONS FOR FIRE FIGHTERS:	Fire fighters should wear full protective gear including self-contained breathing apparatus (SCBA). Fight fire from safe distance. Contact with the fumes and vapours should be avoided by staying upwind. Clean all clothing before reuse. Severely contaminated clothing cannot be adequately decontaminated and must be disposed as a hazardous waste. Shower with soap and water after contact with chemical product.
FURTHER INFORMATION:	<ul style="list-style-type: none"> · If possible, safely move undamaged intact containers away from the area around the fire. · Keep containers cool by spraying with water if exposed to fire. · Dispose of fire debris and contaminated extinguishing water in accordance with official regulations. · In case of fire and/or explosion do not breathe fumes.

6. ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK:

PERSONAL PRECAUTIONS:	Avoid contact with skin and eyes. Do not touch or walk through spilled material. Do not inhale spray or fumes.
PROTECTIVE EQUIPMENT:	Wear personal protective clothing and equipment (see section 8).
EMERGENCY PROCEDURES:	Keep people and animals away. Eliminate all ignition sources (no smoking, flares, sparks, or flames) from immediate area. All equipment used when handling the product must be grounded. Use water spray to reduce vapours or divert vapour cloud drift.
ENVIRONMENTAL PRECAUTIONS:	PREVENT spilled material from entering waterway and sewer systems, basements, and confined areas. If the product contaminates rivers and lakes or waterways immediately inform respective authorities.
METHODS AND MATERIALS FOR CONTAINMENT:	Contain and absorb liquid spills with inert material, remove by scoop or vacuum. Use approved industrial vacuum cleaner for removal and place in clearly marked waste containers.
METHODS AND MATERIALS FOR CLEANING UP:	Contain spillage, and then collect with non-combustible absorbent material, (e.g., sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Use clean, non-sparking tools to collect absorbed material.
SECONDARY DISASTER PREVENTION MEASURES:	NA

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING:	<ul style="list-style-type: none"> · Always store products in their original containers, which include the label listing ingredients, directions for use, and first aid steps in case of accidental poisoning. · Never transfer to soft drink bottles or other containers. Children or others may mistake them for something to eat or drink.
<ul style="list-style-type: none"> - Suitable Technical Measures - Suitable Precautions - Prevention of contact 	

- Wear suitable protective clothing which include chemical-resistant overalls, footwear, socks, dust mask, eye shields and gloves.
- Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Wash hands, arms, and face after application. Wash gloves and contaminated protective clothing daily before reuse.
- Keep out of reach of unauthorized persons, children, and animals. Always store product in their original containers, which include the label listing ingredients, in a cool, dry, and well-ventilated area out of direct sunlight.
- Segregate from foods and animal feeds.
- DO NOT reuse the container for any other purpose.

CONDITIONS FOR SAFE STORAGE:

- Suitable Technical Measures
- Separation measures from incompatible substances and mixtures

PACKAGING MATERIAL

Plastic containers

FIRE PRECAUTIONS:

Store in a well-ventilated area.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

ADI – Acceptable Daily Intake	0,1 mg kg ⁻¹ bw day ⁻¹ (EFSA)
AOEL – Accepted Operator Exposure Level	Not allocated
NATIONAL EXPOSURE STANDARDS:	Not available
BIOLOGICAL LIMIT VALUES:	Not available
ENGINEERING CONTROLS:	Handle in well ventilated areas, generally natural ventilation is adequate. When airborne mist/vapours are generated use local exhaust ventilation controls. Facilities should be equipped with an eyewash station and a safety shower. Where necessary, seek additional occupational hygiene advice.
PERSONAL PROTECTIVE EQUIPMENT:	<p>Respiratory Protection: Where exposure through inhalation may occur when handling and/or when preparing the spray mixture, wear a face mask. If the product is used in confined spaces a respirator suitable for protection from mists of product is adequate.</p> <p>Hand Protection: Wear chemical-resistant gloves made of any waterproof material such as nitrile rubber. Glove thickness: 0.5 mm</p> <p>Eye Protection: The use of safety goggles (full-face shield) is recommended.</p> <p>Skin and Body Protection: Wear suitable protective clothing which include chemical-resistant overalls, footwear, socks, dust mask, eye shields and gloves. Remove and wash contaminated protective clothing daily.</p>

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
COLOUR:	Clear, colour may vary colourless / straw / pink
ODOUR:	Slight bitter smell.
MELTING POINT / FREEZING POINT °C:	Active ingredient: 94 – 100 °C
BOILING POINT:	Active ingredient: >180 °C; decomposes before boiling at 1 atm
DECOMPOSITION TEMPERATURE (a.i):	Active ingredient: 180 °C
FLAMMABILITY:	Not applicable
EXPLOSIVE LIMITS:	Not applicable
FLASH POINT:	92 °C (Pensky Martens Closed Cup) – Category 4
AUTO-IGNITION TEMPERATURE:	Not applicable
pH (1% IN WATER):	5.0 – 8.0
KINEMATIC VISCOSITY:	Not available
VISCOSITY:	Not available
DENSITY / RELATIVE DENSITY:	~ 0,986 g/ml
SOLUBILITY - WATER (a.i):	Active ingredient: In water, 0.65 g/l at 20 °C
N-OCTANOL / WATER PARTITION COEFFICIENT:	log P _{ow} = 2,59 at 20 °C, pH7
VAPOUR PRESSURE (a.i):	Active ingredient: <4.3X10 ⁻⁵ mm Hg at 25 °C, <1.1X10 ⁻⁵ mm Hg at 20 °C
RELATIVE VAPOUR DENSITY:	Not available
PARTICLE CHARACTERISTICS:	Not applicable

10. STABILITY AND REACTIVITY

REACTIVITY:	No data available
CHEMICAL STABILITY:	Stable under normal use and storage conditions.
HAZARDOUS REACTION:	None expected.
CONDITIONS TO AVOID: (e.g. – heat, pressure, static discharge, shock, or vibration)	Avoid excessive heat and fire.
INCOMPATIBLE MATERIALS:	Avoid mixing with strong oxidizing and strong reducing agents as well as anionic detergents.
HAZARDOUS DECOMPOSITION PRODUCTS:	When heated to decomposition, irritant or dangerous fumes/vapours may be emitted. See section 5.

11. TOXICOLOGICAL INFORMATION

ANIMAL ACUTE TOXICITY DATA	
ORAL:	LD ₅₀ (rat) = 4 032 mg/kg bw Category 5
DERMAL:	LD ₅₀ (rat) > 2000 mg/kg bw Category 5
INHALATION:	LC ₅₀ (4h) rat Substance is classified as corrosive EC1272/2008. Expected to be corrosive to respiratory tract
SKIN IRRITATION / CORROSION:	Prolonged skin contact, especially with the concentrate, will cause severe irritation/burning, rash, itching, and blistering.
SERIOUS EYE IRRITATION / DAMAGE:	Risk of serious damage to eyes. Exposure can lead to irritation/burning, eye pain, conjunctivitis, swelling of eye and swelling of eyelid.
RESPIRATORY OR SKIN SENSITIZATION:	Not expected
GERM CELL MUTAGENICITY:	Not Classified
CARCINOGENICITY:	Not Classified
REPRODUCTIVE TOXICITY:	Not Classified
SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE:	Not Classified
SPECIFIC TARGET ORGAN TOXICITY – REPEATED EXPOSURE:	Not Classified
ASPIRATION HAZARD:	Not Classified

12. ECOLOGICAL INFORMATION

ECOTOXICITY:			
DDAC	Birds: LD ₅₀ (oral)	Not hazardous to birds.	
	Fish: LC ₅₀	<i>Oncorhynchus mykiss</i> (Rainbow trout) Acute (96h) LC ₅₀ = 1.16 mg a.i./ℓ <i>Danio rerio</i> (Zebrafish) NOEC = 0,032 mg a.i./ℓ (21-day)	
	Aquatic invertebrates - <i>Daphnia</i>	<i>Daphnia magna</i> (Water flea) Acute (48h) EC ₅₀ = 0,094 mg a.i./ℓ Chronic (21-day) NOEC = 0,01 mg a.i./ℓ	
	Algae - EC ₅₀ / NOEC	<i>Selenastrum capricornutum</i> Acute (72h) EC ₅₀ = 0,026 mg a.i./ℓ Chronic (96h) NOEC = 0,014 mg a.i./ℓ	
	Bees	<i>Apis mellifera</i> Acute contact 48-hour LD ₅₀ > 100 (µg bee ⁻¹)	
	Earthworms: LC ₅₀ /NOEC	<i>Eisenia foetida</i> Acute (14-day) LC ₅₀ > 1000 mg a.i./kg d.w. soil	
	PERSISTENCE, DEGRADABILITY AND MOBILITY:	Bioaccumulation is not expected to be significant. This product is readily biodegradable. Didecyltrimethylammonium Chloride not mobile in soil	
	BIO-ACCUMULATIVE POTENTIAL:	BCF = log P _{ow} < 3 (low potential for bioaccumulation).	
	SOIL MICRO-ORGANISMS:	Carbon transformation	No significant adverse/long-term effect
		Nitrogen transformation	No significant adverse/long-term effect

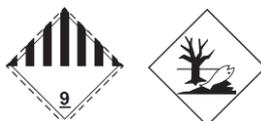
13. DISPOSAL CONSIDERATIONS

On site disposal of the concentrated product is not acceptable. Ideally, the product should be used for its intended purpose. If there is a need to dispose of the product, approach local authorities.

TRIPLE RINSE THE EMPTY CONTAINER AS FOLLOWS: Containers must be completely emptied before being disposed of. Invert the empty container over the spray or mixing tank and drain for at least 30 seconds until the flow has slowed down to a drip. Triple rinse the empty container with clean water equal to a minimum of 30 % of the volume of the container. Add rinsing to the contents of the spray tank. Offer container for recycling or puncture and dispose of at authorised landfill. Do not use container for any other purpose.

14. TRANSPORT INFORMATION

UN NUMBER:	3082
UN PROPER SHIPPING NAME:	ENVIRONMENTAL HAZARDOUS SUBSTANCE, LIQUID (12% Didecyldimethylammonium Chloride)
TRANSPORT HAZARD CLASS(ES):	Class 9
PACKAGING GROUP:	III (low danger)
TRANSPORT PICTOGRAMS:	



ENVIRONMENTAL HAZARDS:	Marine Pollutant: Yes
TRANSPORT IN BULK:	Not applicable, not to be transported in bulk.
SPECIAL PRECAUTIONS FOR USER:	Not applicable

15. REGULATORY INFORMATION

This product is registered in South Africa with the Registrar of ACT 36 of 1947, registration number G2838 as well as under with the National Regulator for Compulsory Specification (NRCS) for chemical disinfectants as published by Government Notice No. 1119 (Government Gazette No. 41186) of 20 October 2017. NRCS Registration Number: NRCS/8054/243642/441

Conforms to South Africa Regulation for Hazardous Chemical Agents, 2021.

SDS valid for five years from date of issue.

16. OTHER INFORMATION

Legend: Full text of H-Statements referred to under sections 3:

H302 – Harmful if swallowed.

H314 – Causes severe skin burns and eye damage.

H225 – Highly Flammable liquid and vapor.

Key literature references and sources of data: Occupational Health and Safety Act 1993. Regulation for Hazardous Chemical Agents, 2021. Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Rev 9, 2021. UN Model Regulations Rev. 22 (2021). EU REGULATION (EC) No 1272/2008.

This Safety Data Sheet (SDS) summarises our best knowledge of 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 SDS and consider the information in the context of how to prevent accidents in the normal workplace including in conjunction with other products.

The information was obtained from sources which we believe are reliable. However, the information is provided in good faith. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and for these reasons we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used for this product only.

First print date: 2016/08/19:

Issue: 3.3 – 11 April 2023 (Section 14: Transport Information Updated).

END of SDS