SAFETY DATA SHEET

Classified as hazardous according to criteria of WorkSafe New Zealand

Section 1 - Identification

Product Name **Virkon Virucidal Disinfectant**

Product Code	**VRKVIRKON5, VRKVIRKON50, VRKVIRKON5G, VRKVIRKON5KG**
Address	Thermo Fisher Scientific New Zealand Ltd 244 Bush Road, Albany, Auckland, New Zealand
Emergency Tel.	**CHEMTREC®** **09 980 6780 or +64 9 980 6780**
Telephone / Fax Numbers	Tel: 09 980 6700 Fax: 09 980 6788
E-mail address	NZinfo@thermofisher.com

Recommended Use Laboratory chemicals.

Section 2 - Hazard(s) Identification

Classification under Work Safe New Zealand

6.5B - Substances that are contact sensitisers
6.5A - Substances that are respiratory sensitisers
5.1.1C - Oxidising substances that are liquids or solids: low hazard
8.3A - Substances that are corrosive to ocular tissue
8.2C - Substances that are corrosive to dermal tissue
9.1D - Substances that are slightly harmful in the aquatic environment or are otherwise designed for biocidal action

Classified as hazardous according to criteria of WorkSafe New Zealand

HSNO Approval Number **HSR002596**

GHS Classification

Physical hazards
Based on available data, the classification criteria are not met

Oxidizing solids	Category 3

Health hazards

Skin Corrosion/irritation	Category 1 C
Serious Eye Damage/Eye Irritation	Category 1
Respiratory Sensitization	Category 1
Skin Sensitization	Category 1

Environmental hazards

Chronic aquatic toxicity	Category 4

Label Elements

Signal Word **Danger**

Hazard Statements
H317 - May cause an allergic skin reaction
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H272 - May intensify fire; oxidizer
H314 - Causes severe skin burns and eye damage
H413 - May cause long lasting harmful effects to aquatic life

Precautionary Statements
P273 - Avoid release to the environment
P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves
P285 - In case of inadequate ventilation wear respiratory protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P341 - IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing
P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention
P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician
P363 - Wash contaminated clothing before reuse
P403 - Store in a well-ventilated place
P501 - Dispose of contents/ container to an approved waste disposal plant

Other information
No information available

Section 3 - Composition and Information on Ingredients

Component	CAS-No	Weight %
Pentapotassium bis(peroxymonosulphate) bis(sulphate)	70693-62-8	40-55
Benzenesulfonic acid, C10-13-alkyl derivatives sodium salt	68411-30-3	10-12
Malic acid	6915-15-7	7-10
Sulfamic acid	5329-14-6	4-6
Sodium toluenesulfonate	12068-03-0	1-5
Sodium chloride	7647-14-5	1-5
Potassium persulfate	7727-21-1	<3

Section 4 - First Aid Measures

Inhalation Move to fresh air.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye Contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Self-Protection of the First Aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.
First Aid Facilities	Eyewash, safety shower and washroom.
Most important symptoms and effects	May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. . Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing
Notes to Physician	Treat symptomatically.

Section 5 - Fire Fighting Measures

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Extinguishing media which must not be used for safety reasons
No information available.

Hazardous Combustion Products
Specific Hazards Arising from the Chemical
Thermal decomposition can lead to release of irritating gases and vapors.
Special protective equipment and precautions for fire fighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6 - Accidental Release Measures

Emergency procedures
Ensure adequate ventilation.
Environmental Precautions
See Section 12 for additional ecological information. Do not flush into surface water or sanitary sewer system.

Reference to Other Sections
Refer to protective measures listed in Sections 8 and 13.

Section 7 - Handling and Storage

Precautions for Safe Handling
Ensure adequate ventilation.

Conditions for Safe Storage, Including any Incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

Section 8 - Exposure Controls and Personal Protection

Exposure limits
The product does not contain any hazardous materials with occupational exposure limits established.

Biological limit values
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Engineering Measures
Ensure adequate ventilation, especially in confined areas. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of

properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection Safety glasses with side-shields (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial applications)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	AUS/NZ Standard	Glove comments
Disposable gloves.	See manufacturers recommendations	-	AS/NZS 2161.1	(minimum requirement)

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Skin and body protection Long sleeved clothing

Repiratory Protection Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of repiratory protective devices (or AUS/NZ equivalent)
When RPE is used a face piece Fit Test should be conducted

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Pink	
Physical State	Solid	
Odor	No information available	
Odor Threshold	No data available	
pH	2.4	
Melting Point/Range	No data available	
Softening Point	No data available	
Boiling Point/Range	Not applicable	
Flash Point	Not applicable	**Method -** No information available
Evaporation Rate	Not applicable	Solid
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Vapor Pressure	No data available	
Vapor Density	Not applicable	Solid
Specific Gravity / Density	No data available	
Bulk Density	No data available	
Water Solubility	No information available	
Solubility in other solvents	No information available	

Partition Coefficient (n-octanol/water)

Component	log Pow
Malic acid	-1.26
Sulfamic acid	0.1

Autoignition Temperature	Not applicable
Decomposition Temperature	No data available

Viscosity	Not applicable	Solid
Explosive Properties	No information available	
Oxidizing Properties	No information available	

Other information

Section 10 - Stability and Reactivity

Reactivity None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Heat, flames and sparks.

Hazardous Decomposition Products None under normal use conditions.

Hazardous Polymerization No information available.

Section 11 - Toxicological Information

Information on Toxicological Effects

Product Information

(a) acute toxicity;

Oral	Based on available data, the classification criteria are not met
Dermal	Based on available data, the classification criteria are not met
Inhalation	Based on available data, the classification criteria are not met

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Pentapotassium bis(peroxymonosulphate) bis(sulphate)	LD50 = 1204 mg/kg (Rat)	LD50 > 11000 mg/kg (Rabbit)	LC50 > 14 mg/L (Rat) 1 h
Benzenesulfonic acid, C10-13-alkyl derivatives sodium salt	LD50 = 404 mg/kg (Rat)		
Sulfamic acid	3160 mg/kg (Rat)	>2000 mg/kg (Rat)	
Sodium chloride	LD50 = 3 g/kg (Rat)	LD50 > 10 g/kg (Rabbit)	LC50 > 42 g/m³ (Rat) 1 h
Potassium persulfate	802 mg/kg (Rat)	> 10000 mg/kg (Rabbit)	

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;

Respiratory	Category 1
Skin	Category 1

No information available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs No information available.
(j) aspiration hazard; Not applicable
Solid

Symptoms / effects,both acute and delayed Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Section 12 - Ecological Information

Ecotoxicity effects Contains a substance which is:. Harmful to aquatic organisms. The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Pentapotassium bis(peroxymonosulphate) bis(sulphate)	LC50: > 32 mg/L, 96h semi-static (Brachydanio rerio)	EC50: = 5.3 mg/L, 24h (Daphnia magna)		
Benzenesulfonic acid, C10-13-alkyl derivatives sodium salt	LC50: = 2.2 mg/L, 96h static (Lepomis macrochirus) LC50: 0.6 - 1.9 mg/L, 96h semi-static (Brachydanio rerio) LC50: = 5.1 mg/L, 96h flow-through (Brachydanio rerio) LC50: 3.8 - 6.6 mg/L, 96h static (Oncorhynchus mykiss) LC50: = 0.7 mg/L, 96h static (Pimephales promelas) LC50: = 3.4 mg/L, 96h (Pimephales promelas)	EC50: = 0.63 mg/L, 48h (Daphnia magna)	EC50: 4.29 - 12.5 mg/L, 96h (Pseudokirchneriella subcapitata) EC50: = 9 mg/L, 96h (Desmodesmus subspicatus) EC50: = 11 mg/L, 72h (Pseudokirchneriella subcapitata)	EC50 = 45 mg/L 16 h
Sulfamic acid	LC50: 70.3 mg/L/96h (Pimephales promelas)	-	-	-
Sodium chloride	Pimephals prome: LC50: 7650 mg/L/96h	EC50: 1000 mg/L/48h		
Potassium persulfate	LC50: 100 mg/L/96h (P.reticulata)	EC50: 357 mg/L/24H (Daphnia magna)		

Persistence and Degradability No information available
Degradation in sewage treatment plant Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.
Bioaccumulative Potential No information available

Component	log Pow	Bioconcentration factor (BCF)
Benzenesulfonic acid, C10-13-alkyl derivatives sodium salt		104 - 245
Malic acid	-1.26	No data available
Sulfamic acid	0.1	No data available

Mobility No information available.
Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors
Persistent Organic Pollutant This product does not contain any known or suspected substance
Ozone Depletion Potential This product does not contain any known or suspected substance

Section 13 - Disposal Considerations

Waste from Residues / Unused Products Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be

disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point.

Other Information Disposal agencies or waste contractors must comply with the New Zealand Hazardous Substances (Disposal) Regulations . Do not dispose of waste into sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.

Section 14 - Transport Information

IMDG/IMO Not regulated

Component	IMDG Marine Pollutant
Benzenesulfonic acid, C10-13-alkyl derivatives sodium salt 68411-30-3 (10-12)	IMDG regulated marine pollutant (Listed in the index)

NZS 5433:2012 Not regulated

Component	Hazchem Code
Sulfamic acid 5329-14-6 (4-6)	2X
Potassium persulfate 7727-21-1 (<3)	1Z

IATA Not regulated

Environmental hazards No hazards identified

Special Precautions No special precautions required

Additional information None known

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	HSNO Approval Number
Pentapotassium bis(peroxymonosulphate) bis(sulphate)	HSR003754
Benzenesulfonic acid, C10-13-alkyl derivatives sodium salt	HSR003394
Malic acid	HSR003278
Sulfamic acid	HSR001549
Sodium chloride	HSR002722
Potassium persulfate	HSR001343

International Inventories X = listed

Component	NZIoC	AICS	EINECS	ELINCS	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	KECL
Pentapotassium bis(peroxymonosulphate) bis(sulphate)	X	X	274-778-7	-	X	X	-	X	-	X	X
Benzenesulfonic acid, C10-13-alkyl derivatives sodium salt	X	X	270-115-0	-	-	X	-	X	X	X	X
Malic acid	X	X	230-022-8	-	X	X	-	X	X	X	X
Sulfamic acid	X	X	226-218-8	-	X	X	-	X	X	X	X
Sodium toluenesulfonate	X	X	235-088-	-	X	X	-	X	X	X	-

			1								
Sodium chloride	X	X	231-598-3	-	X	X	-	X	X	X	X
Potassium persulfate	X	X	231-781-8	-	X	X	-	X	X	X	X

Component	New Zealand Ozone Depleting Substances listing	Australian Ozone Depleting substance listings	Ozone Depletion Potential	Persistent Organic Pollutant	IMDG Marine Pollutant
Benzenesulfonic acid, C10-13-alkyl derivatives sodium salt					IMDG regulated marine pollutant (Listed in the index)

Prohibition or notification/licensing requirements Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

Section 16 - Other Information

This safety data sheet complies with the requirements of WorkSafe New Zealand Regulations

Legend

AICS - Australian Inventory of Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
IECSC - Chinese Inventory of Existing Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TWA - Time Weighted Average
IARC - International Agency for Research on Cancer
ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships
NZS 5433:2012 - Transport of Dangerous Goods on Land
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
WEL - Workplace Exposure Limit
DNEL - Derived No Effect Level
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative
VOC - Volatile Organic Compounds

NZIoC - New Zealand Inventory of Chemicals
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japanese Existing and New Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
CAS - Chemical Abstracts Service
ACGIH - American Conference of Governmental Industrial Hygienists
PNEC - Predicted No Effect Concentration
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
ADG Australian Code for the Transport of Dangerous Goods by Road and Rail
OECD - Organisation for Economic Co-operation and Development
LC50 - Lethal Concentration 50%
ATE - Acute Toxicity Estimate
RPE - Respiratory Protective Equipment
NOEC - No Observed Effect Concentration
BCF - Bioconcentration factor
PBT - Persistent, Bioaccumulative, Toxic

Key literature references and sources for data
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards	On basis of test data
Health Hazards	Calculation method
Environmental hazards	Calculation method

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Revision Date	11-Jan-2018
Revision Summary	Update to Format.

Disclaimer

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End of Safety Data Sheet