SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : VIRKON S

Product code : 57747484

Supplier Details

Supplier : NRM
535 Wairakei Road, Burnside, Christchurch, 8140 NZ

Telephone : 0800 734 607

Emergency telephone number : NZ Poisons Information Centre Ph: 0800 764766
24-hour Medical Emergency: 0800 111174
Transport Emergency: 0800 658080

Recommended use of the chemical and restrictions on use

Recommended use : Disinfectants

SECTION 2. HAZARDS IDENTIFICATION

Classified as hazardous according to criteria in the HS (Minimum Degrees of Hazard) Regulations 2001
Not classified as a Dangerous Good under NZS 5433

HSNO Classification:

6.1E	:	Acute toxicity (Oral)
6.1D	:	Acute toxicity (Inhalation)
6.1E	:	Acute toxicity (Dermal)
6.3A	:	Skin irritation
8.3A	:	Serious eye damage
9.1D	:	Aquatic toxicity (Acute or Chronic)

Endpoints which are not classified, cannot be classified or are not applicable are not shown.

Label content

Pictogram :

Signal word : Danger

Hazardous warnings : May be harmful if swallowed.
May be harmful in contact with skin.
Causes skin irritation.
Causes serious eye damage.
Harmful if inhaled.
Toxic to aquatic life.

Precautionary : Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

statements	Wash skin thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves. IF ON SKIN: Wash with plenty of soap and water. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician. Specific treatment (see supplemental first aid instructions on this label). If skin irritation occurs: Get medical advice/ attention. Take off contaminated clothing and wash before reuse. Dispose of contents/ container to an approved waste disposal plant.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
pentapotassium bis(peroxymonosulphate) bis(sulphate)	70693-62-8	>= 30 -< 60
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts	68411-30-3	>= 10 -< 30
malic acid	6915-15-7	< 10
sulphamidic acid	5329-14-6	< 10
potassium hydrogensulphate	7646-93-7	>= 1 -< 3
dipotassium disulphate	7790-62-7	>= 1 -< 3
sodium toluenesulphonate	12068-03-0	< 10
dipotassium peroxodisulphate	7727-21-1	< 1
dipentene	138-86-3	< 1

SECTION 4. FIRST AID MEASURES

General advice	:	Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.
If inhaled	:	If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of skin contact	:	If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.
In case of eye contact	:	Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

Most important symptoms and effects, both acute and delayed : None known.

Notes to physician : No special measures required.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : In case of fire, use water spray (fog), foam or dry chemical.

Unsuitable extinguishing media : Carbon dioxide (CO2)
High volume water jet

Specific hazards during fire-fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Sulphur oxides
Metal oxides
Carbon dioxide (CO2)
Carbon monoxide
Nitrogen oxides (NOx)
Halogenated compounds

Specific extinguishing methods : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Avoid dust formation.
Avoid breathing dust.

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform

respective authorities.

Methods and materials for containment and cleaning up	:	Neutralize with chalk, alkali solution or ammonia. Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed.
Advice on safe handling	:	Protect from moisture. Avoid formation of respirable particles. Do not breathe vapours/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.
Conditions for safe storage	:	Protect from moisture. Combustible substances Strong bases Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.
Materials to avoid	:	Do not store near acids.
Recommended storage temperature	:	< 50 °C
Further information on storage stability	:	Keep in a dry place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis

dipotassium peroxodisulphate	7727-21-1	Peak limit	0.1 mg/m3	AU OEL
	Further information: Sensitiser			
		TWA	0.1 mg/m3 (Persulphate)	ACGIH

Engineering measures : This information is not available.

Personal protective equipment

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.

Filter type : Recommended Filter type:

ABEK-P2-filter

Hand protection
Material : Butyl rubber - IIR
Wearing time : < 60 min

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves. After contamination with product change the gloves immediately and dispose of them according to relevant national and local regulations

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Wear suitable protective clothing.
Dust impervious protective suit
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : powder

Colour : pink

Odour : pleasant, sweet

Odour Threshold : No data available

pH : 2.35 - 2.65
Concentration: 1 %

Melting point/freezing point : No data available

Boiling point/boiling range : No data available

Flash point : No data available

Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	1.07 g/cm³ (20 °C)
Solubility(ies) Water solubility	: :	 65 g/l
Partition coefficient: n-octanol/water	:	No data available
Ignition temperature	:	No data available
Decomposition temperature	:	> 50 °C
Viscosity	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Molecular weight	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	No decomposition if stored and applied as directed. Dust may form explosive mixture in air.
Conditions to avoid	:	Exposure to moisture
Incompatible materials	:	Incompatible with acids. Combustible substances Oxidizing agents Strong bases brass Cyanides

Copper
Halogenated compounds
Metal salt.

Hazardous decomposition products : Oxygen
Chlorine
Sulphur oxides
Hypochlorites

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat): 4,123 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): 3.7 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: the particle size measurements of the product indicate that it is not respirable and therefore not bioavailable by the inhalation route.

Acute dermal toxicity : LD50 (Rat): > 5,000 mg/kg
Remarks: Extrapolation according to Regulation (EC) No. 440/2008

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

Acute oral toxicity : LD50 (Rat, male and female): 500 mg/kg
Method: OECD Test Guideline 423

Acute inhalation toxicity : LC0 (Rat, male): > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Highest producible concentration.

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
Method: OECD Test Guideline 402
Remarks: Extrapolation according to Regulation (EC) No. 440/2008

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:

Acute oral toxicity : LD50 (Rat, male and female): 1,220 mg/kg

Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
Method: OECD Test Guideline 402
GLP: yes
Remarks: Extrapolation according to Regulation (EC) No. 440/2008

malic acid:

Acute oral toxicity : LD50 (Rat, male and female): 3,500 mg/kg
Method: OECD Test Guideline 401
GLP: no

Acute inhalation toxicity : LC0 (Rat, male and female): > 1.306 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Remarks: Highest producible concentration.

Acute dermal toxicity : LD50 (Rabbit, female): > 5,000 mg/kg
Method: OECD Test Guideline 401
GLP: no

sulphamidic acid:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
Method: OECD Test Guideline 402
GLP: yes
Remarks: Extrapolation according to Regulation (EC) No. 440/2008

potassium hydrogensulphate:

Acute oral toxicity : LD50 (Rat): 2,340 mg/kg

dipotassium disulphate:

Acute oral toxicity : LD50 (Rat, male): 2,140 mg/kg
Method: OECD Test Guideline 401
Remarks: Test results on an analogous product

Acute inhalation toxicity : Assessment: Corrosive to the respiratory tract.

Assessment: The component/mixture is toxic after short term inhalation.

sodium toluenesulphonate:

Acute oral toxicity : LD50 (Rat): 6,500 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

dipotassium peroxodisulphate:

Acute oral toxicity	:	LD50 (Rat): 700 mg/kg
Acute inhalation toxicity	:	LC0 (Rat): > 2.95 mg/l Exposure time: 4 h Test atmosphere: dust/mist Remarks: Highest producible concentration.
Acute dermal toxicity	:	LD50 (Rabbit): > 10,000 mg/kg

dipentene:

Acute oral toxicity	:	LD50 (Rat): 5,300 mg/kg
Acute dermal toxicity	:	LD50 (Rat): > 5,000 mg/kg

Skin corrosion/irritation

Product:

Species: Rabbit
Method: OECD Test Guideline 404
Result: Irritating to skin.

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

Species: Rabbit
Method: OECD Test Guideline 404
Result: Causes burns.

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:

Species: Rabbit
Method: OECD Test Guideline 404
Result: Irritating to skin.

malic acid:

Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

sulphamidic acid:

Species: Rabbit
Method: OECD Test Guideline 404
Result: Irritating to skin.

potassium hydrogensulphate:

Assessment: Causes burns.

dipotassium disulphate:

Assessment: Causes severe burns.

sodium toluenesulphonate:

Species: Rabbit
Result: Irritating to skin.

dipotassium peroxodisulphate:

Species: Rabbit
Method: OECD Test Guideline 404
Result: Irritating to skin.

dipentene:

Assessment: Irritating to skin.

Serious eye damage/eye irritation

Product:

Remarks: May cause irreversible eye damage.

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

Species: Rabbit
Result: Risk of serious damage to eyes.
Method: OECD Test Guideline 405

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:

Species: Rabbit
Result: Risk of serious damage to eyes.
Method: OECD Test Guideline 405

malic acid:

Species: Rabbit
Result: Irritating to eyes.
Method: OECD Test Guideline 405

sulphamidic acid:

Species: Rabbit
Result: Irritating to eyes.
Method: OECD Test Guideline 405

dipotassium disulphate:

Assessment: Risk of serious damage to eyes.

sodium toluenesulphonate:

Species: Rabbit
Result: Irritating to eyes.

dipotassium peroxodisulphate:

Result: Irritating to eyes.

dipentene:

Species: Rabbit
Result: Irritating to eyes.

Respiratory or skin sensitisation

Product:

Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Did not cause sensitisation on laboratory animals.

Exposure routes: Inhalation
Species: Mammal - species unspecified
Method: Expert judgement
Result: Does not cause respiratory sensitisation.

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Does not cause skin sensitisation.

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:

Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Did not cause sensitisation on laboratory animals.

malic acid:

Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Did not cause sensitisation on laboratory animals.
GLP: yes

sulphamidic acid:

Result: Did not cause sensitisation on laboratory animals.

sodium toluenesulphonate:

Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Did not cause sensitisation on laboratory animals.

dipotassium peroxodisulphate:

Exposure routes: Inhalation
Species: Mammal - species unspecified
Result: May cause sensitisation by inhalation.

Exposure routes: Skin contact
Species: Mouse
Method: OECD Test Guideline 429
Result: May cause sensitisation by skin contact.

dipentene:

Exposure routes: Dermal
Species: Guinea pig
Result: May cause sensitisation by skin contact.

Chronic toxicity

Germ cell mutagenicity

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

Genotoxicity in vitro : Test system: Mammalian-Animal
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: positive
GLP: yes

Test system: Bacteria
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

Test system: Mammalian-Human
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: positive
GLP: yes

Genotoxicity in vivo : Species: Mammalian-Animal
Application Route: Oral
Method: OECD Test Guideline 474
Result: negative

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:

Genotoxicity in vitro : Test Type: Ames test
Test system: Bacteria
Metabolic activation: with and without metabolic activation
Result: negative

Genotoxicity in vivo : Test Type: Cytogenetic assay
Species: Mouse

Application Route: Oral
Result: negative

malic acid:

Genotoxicity in vitro : Remarks: Not mutagenic in a standard battery of genetic toxicological tests.

sulphamidic acid:

Genotoxicity in vitro : Test system: Mammalian-Human
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 487
Result: negative
GLP: yes

Test system: Mammalian-Animal
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Test system: Bacteria
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

sodium toluenesulphonate:

Genotoxicity in vitro : Remarks: No mutagenic effect.

dipotassium peroxodisulphate:

Genotoxicity in vitro : Remarks: Not mutagenic in a standard battery of genetic toxicological tests.

Carcinogenicity

Components:

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:

Species: Rat
Application Route: Oral
Exposure time: 2 Years
Result: negative

Reproductive toxicity

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

Effects on foetal development : Remarks: No teratogenic or foetotoxic effects were found at all dose levels tested.

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:

Effects on foetal development : Species: Rat, female
Application Route: Oral
Dose: 600 milligram per kilogram
Duration of Single Treatment: 15 d
Remarks: No known significant effects or critical hazards.

malic acid:

Effects on foetal development : Remarks: No known significant effects or critical hazards.

STOT - single exposure

Components:

potassium hydrogensulphate:

Assessment: May cause respiratory irritation.

dipotassium peroxodisulphate:

Assessment: May cause respiratory irritation.

Repeated dose toxicity

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

Species: Rat, male and female
LOAEL: > 1,000 mg/kg
Application Route: Oral
Exposure time: 28 d
Number of exposures: 7 days/week
Method: OECD Test Guideline 407
Remarks: Subacute toxicity

Species: Rat, male and female
LOAEL: 600 mg/kg
Application Route: Oral
Exposure time: 90 d
Number of exposures: 7 days/week
Method: OECD Test Guideline 408
Remarks: Subchronic toxicity

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:

Species: Rat, male and female
NOAEL: 50 mg/kg
Application Route: Oral
Exposure time: 12 Weeks
Remarks: Subchronic toxicity

malic acid:

Remarks: No known significant effects or critical hazards.

sodium toluenesulphonate:

Species: Rat
NOAEL: 114 mg/kg
Application Route: Oral
Exposure time: 91 d
Method: OECD Test Guideline 408
Remarks: Subchronic toxicity

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	:	LC50 (Salmo salar (Atlantic salmon)): 24.6 mg/l Exposure time: 96 h Method: Regulation (EC) No. 440/2008, Annex, C.1 Remarks: Fresh water
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 6.5 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 Remarks: Fresh water
Toxicity to algae	:	NOEC (Desmodesmus subspicatus (green algae)): 6.25 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Fresh water

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 53 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 GLP: yes Remarks: Fresh water
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 3.5 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 GLP: yes Remarks: Fresh water
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata (microalgae)): > 1 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 GLP: yes

Remarks: Fresh water

NOEC (Pseudokirchneriella subcapitata (microalgae)): 0.5 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes
Remarks: Fresh water

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 1.67 mg/l Exposure time: 96 h Method: OPPTS 850.1075
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 2.9 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 GLP: yes Remarks: Fresh water
Toxicity to algae	:	EC50 (Desmodesmus subspicatus (green algae)): 10 - 100 mg/l Exposure time: 72 h NOEC (Chlorella vulgaris (Fresh water algae)): 3.1 mg/l Exposure time: 15 d
Toxicity to fish (Chronic toxicity)	:	NOEC (Lepomis macrochirus (Bluegill sunfish)): 1 mg/l Exposure time: 28 Days Method: OECD Test Guideline 204 GLP: no Remarks: Fresh water
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 1.18 mg/l Exposure time: 21 Days Method: OECD Test Guideline 211 GLP: no Remarks: Fresh water

malic acid:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 GLP: yes Remarks: Fresh water
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 240 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 GLP: yes Remarks: Fresh water
Toxicity to algae	:	EC50 (algae): > 100 mg/l Exposure time: 72 h

Method: OECD Test Guideline 201
GLP: yes
Remarks: Fresh water

NOEC (algae): 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes
Remarks: Fresh water

sulphamidic acid:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 70.3 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
GLP: no
Remarks: Fresh water

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 71.6 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: yes
Remarks: Fresh water

Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): 48 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes
Remarks: Fresh water

NOEC (Desmodesmus subspicatus (green algae)): 18 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes
Remarks: Fresh water

Toxicity to fish (Chronic toxicity) : NOEC (Danio rerio (zebra fish)): >= 60 mg/l
Exposure time: 34 d
Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 19 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211

Toxicity to microorganisms : EC50: > 200 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
GLP: yes
Remarks: Fresh water

dipotassium disulphate:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 680 mg/l
Exposure time: 96 h
Remarks: Fresh water

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 720 mg/l Exposure time: 48 h Remarks: Fresh water
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata (microalgae)): 1,492 mg/l Exposure time: 96 h Remarks: Fresh water EC10 (Pseudokirchneriella subcapitata (microalgae)): 656 mg/l Exposure time: 96 h Remarks: Fresh water
Toxicity to fish (Chronic toxicity)	:	NOEC (Pimephales promelas (fathead minnow)): > 595 mg/l Exposure time: 7 Days Remarks: Fresh water
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Ceriodaphnia dubia (Water flea)): 790 mg/l Exposure time: 7 Days Remarks: Fresh water

sodium toluenesulphonate:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 490 mg/l Exposure time: 96 h Remarks: Fresh water
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 318 mg/l Exposure time: 48 h Remarks: Fresh water
Toxicity to algae	:	EC50 (Desmodesmus subspicatus (green algae)): 245 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Fresh water NOEC (Desmodesmus subspicatus (green algae)): 18 mg/l Exposure time: 72 h Remarks: Fresh water

dipotassium peroxodisulphate:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 76.3 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 120 mg/l Exposure time: 48 h
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata (microalgae)): 83.7 mg/l Exposure time: 72 h Method: OECD Test Guideline 201

Ecotoxicology Assessment

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

dipentene:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 0.702 mg/l
Exposure time: 96 h
Remarks: Fresh water

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.421 mg/l
Exposure time: 48 h
Remarks: Fresh water

M-Factor (Acute aquatic toxicity) : 1

M-Factor (Chronic aquatic toxicity) : 1

Persistence and degradability

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

Biodegradability : Result: The methods for determining the biological degradability are not applicable to inorganic substances.

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 34.3 mg/l
Result: Readily biodegradable.
Biodegradation: 83 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
GLP: yes

malic acid:

Biodegradability : aerobic
Result: Readily biodegradable.
Biodegradation: 67.5 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
GLP: yes

sulphamidic acid:

Biodegradability : Result: The methods for determining the biological degradability are not applicable to inorganic substances.

dipotassium disulphate:

Biodegradability : Result: The methods for determining the biological degradability are not applicable to inorganic substances.

sodium toluenesulphonate:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 0 - 2 %
Exposure time: 28 d
Method: OECD Test Guideline 301C

dipotassium peroxodisulphate:

Biodegradability : Result: The methods for determining the biological degradability are not applicable to inorganic substances.

dipentene:

Biodegradability : Result: Not rapidly biodegradable

Bioaccumulative potential

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

Partition coefficient: n-octanol/water : log Pow: < 0.3
Method: OECD Test Guideline 117

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts:

Partition coefficient: n-octanol/water : log Pow: 1.4
Method: OECD Test Guideline 123

malic acid:

Partition coefficient: n-octanol/water : log Pow: -1.26

sulphamidic acid:

Partition coefficient: n-octanol/water : log Pow: -4.34

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.
Harmful to aquatic life with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

National Regulations

ADG
Not regulated as a dangerous good

International Regulations

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Hazard statements : Not dangerous cargo.
Irritating to skin.
Keep dry.
Risk of serious damage to eyes.
Keep separated from foodstuffs.

SECTION 15. REGULATORY INFORMATION

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

Standard for the Uniform Scheduling of Medicines and Poisons : Schedule 6

Prohibition/Licensing Requirements : There is no applicable prohibition or notification/licensing requirements, including for carcinogens under Commonwealth, State or Territory legislation.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals

Revision Date	:	14.06.2018
ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
AU OEL	:	Australia. Workplace Exposure Standards for Airborne Contaminants.
ACGIH / TWA	:	8-hour, time-weighted average
AU OEL / Peak limit	:	Exposure standard - peak

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.