

SAFETY DATA SHEET



Virkon® S

Version 3.0

Revision Date 10.07.2014

Document no. 130000014173

This SDS adheres to the standards and regulatory requirements of New Zealand and may not meet the regulatory requirements in other countries.

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product name : Virkon® S

Recommended use of the chemical and restriction on use

Recommended use : Disinfectant

Manufacturer, importer, supplier

Company : DuPont (New Zealand) Limited
Street address : Level 1, 14 Ormiston Road, East Tamaki, Auckland 2016
New Zealand
Telephone : 0800 658080
Telefax : (09)-271-2961

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

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.

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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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Mixture

Components

Chemical Name	CAS-No.	Concentration
Pentapotassium bis(peroxymonosulphate) bis(sulphate)	70693-62-8	40 - 55%
Sodium C10-13-alkylbenzenesulfonate	68411-30-3	10 - 12%
Malic acid	6915-15-7	7 - 10%
Sulphamidic acid	5329-14-6	4 - 6%
Sodium toluenesulphonate	12068-03-0	1 - 5%
Dipotassium peroxodisulphate	7727-21-1	<3%
Dipentene	138-86-3	<0.25%

4. FIRST AID MEASURES

Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.

- Inhalation** : Remove from exposure, lie down. If victim has stopped breathing: Artificial respiration and/or oxygen may be necessary. Consult a physician.
- Skin contact** : Wash off immediately with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing before re-use. Consult a physician.
- Eye contact** : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.
- Ingestion** : Do NOT induce vomiting. If a person vomits when lying on his back, place him in the recovery position. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician immediately.
- Most important symptoms/effects, acute and delayed** : No information available.
- Protection of first-aiders** : No information available.
- Notes to physician** : No information available.

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5. FIREFIGHTING MEASURES

- Suitable extinguishing media** : The product itself does not burn., Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media** : Carbon dioxide (CO₂)
- Specific hazards** : Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous decomposition products (see also section 10)
- Special protective equipment for firefighters** : Wear self-contained breathing apparatus and protective suit.
- Specific extinguishing methods** : No information available.
- Further information** : The product itself does not burn.
- Hazchem Code** : Not applicable

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures** : Evacuate personnel to safe areas. Use personal protective equipment.
- Environmental precautions** : Do not flush into surface water.
- Methods and materials for containment and cleaning up** : Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Avoid moisture. After cleaning, flush away traces with water.
- Additional advice** : Dispose of in accordance with local regulations.

7. HANDLING AND STORAGE

Handling

- Technical measures/Precautions** : Avoid dust formation in confined areas. Do not breathe dust or spray mist. Provide adequate ventilation. Avoid contact with skin and eyes. For personal protection see section 8.
- Precautions for safe handling** : No information available.

Storage

- Suitable storage conditions** : Protect from contamination. Keep containers dry and tightly closed to avoid moisture absorption and contamination. Store in original container.
- Advice on common storage: Keep away from: Combustible material Strong bases

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Storage period: Stable at normal ambient temperature and pressure.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical Name	Occupational Exposure Limits	Regulation
Dust (inhalable and respirable fraction)		
TWA	3 mg/m ³ (Respirable dust.)	NZ OEL (07 2011)
TWA	10 mg/m ³ (Inhalable dust.)	NZ OEL (07 2011)
TWA	10 mg/m ³ (Inhalable particles.)	US ACGIH (03 2012)
TWA	3 mg/m ³ (Respirable particles.)	US ACGIH (03 2012)
Dipotassium peroxodisulphate		
TWA (as persulfate)	0.1 mg/m ³	US ACGIH (2011)

Engineering measures : Provide local exhaust ventilation when handling material in bulk.

Biological occupational exposure limits : No information available.

Personal protective equipment

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Provide adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Half mask with combination filter A2/P2 (EN 141) Consult the respirator manufacturer to determine the appropriate type of equipment for a given application. Observe respirator use limitations specified by the manufacturer.

Hand protection : No information available.

Eye protection : Tightly fitting safety goggles, Eye protection complying with EN 166.

Skin protection : Wear as appropriate:
Apron, Boots, Remove and wash contaminated clothing before re-use.

Hygiene measures : Wash hands before breaks and immediately after handling the product. Regular cleaning of equipment, work area and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (Physical state, form, colour, etc.)

Physical state : solid
Form : powder
Colour : pink

Odour : pleasant sweet

Odour Threshold : No information available.

pH : 2.35 - 2.65
(1% solution in water)

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Melting point/freezing point

No information available.

Initial boiling point and boiling range

No information available.

Flash point : Not applicable

Evaporation rate : No information available.

Flammability (solid, gas) : No information available.

Upper/lower flammability or explosive limits

Upper explosion limit : No information available.

Lower explosion limit : No information available.

Vapour pressure : No information available.

Vapour density : No information available.

Density

Specific gravity : 1.07

(Relative density)

Bulk density : 0.981 GJ (24 °C)

Solubility(ies)

Water solubility : 65 g/l (20 °C)

Partition coefficient: n-octanol/water : No information available.

Auto-ignition temperature

No information available.

Decomposition temperature : >50 °C

Viscosity

Viscosity, kinematic : No information available.

Molecular weight : No information available.

10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.

Conditions to avoid : Exposure to moisture.

Materials to avoid : Strong bases, Combustible material, Halogenated compounds, Heavy metal salts

Hazardous decomposition products : Oxygen, Chlorine, Sulphur oxides Sulphur dioxide, Hypochlorite

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11. TOXICOLOGICAL INFORMATION**Acute toxicity**

Oral

Virkon® S : LD50/Rat: 4,123 mg/kg
Method: OECD Test Guideline 401
(Data on the product itself)

Inhalation

Virkon® S : LC50/4 h/Rat: 3.7 mg/l
Method: aerosol
(Data on the product itself)

Dermal

Virkon® S : LD50/Rat: >2,200 mg/kg
(Data on the product itself)

Skin corrosion/irritation

Virkon® S : Result: Irritating to skin.
Method: OECD Test Guideline 404
(Data on the product itself)

Serious eye damage/eye irritation

Pentapotassium bis(peroxymonosulphate) bis(sulphate) : Species: Rabbit
Result: Corrosive
Classification: Causes severe burns.

Sodium C10-13-alkylbenzenesulfonate : Corrosive

Malic acid : Species: Rabbit
Result: Severe eye irritation
Classification: Irritating to eyes.

Sulphamidic acid : Species: Rabbit
Result: Eye irritation
Classification: Irritating to eyes.
Method: US EPA Test Guideline OPPTS 870.2400

Sodium toluenesulphonate : Species: Rabbit
Result: Mild eye irritation
Classification: Irritating to eyes.

Dipotassium peroxodisulphate : Species: Rabbit
Result: Eye irritation
Classification: Irritating to eyes.
Method: OECD Test Guideline 405
Information given is based on data obtained from similar substances.

Dipentene : Species: Rabbit
Result: Eye irritation

Respiratory or skin sensitisation

Virkon® S : Buehler Test
Species: Guinea pig
Result: Does not cause skin sensitisation.
(Data on the product itself)

Result: Does not cause respiratory sensitisation.

Germ cell mutagenicity

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- Pentapotassium bis(peroxymonosulphate) bis(sulphate) : Animal testing did not show any mutagenic effects. Did not cause genetic damage in cultured bacterial cells. Tests on mammalian cell cultures showed mutagenic effects. Evidence suggests this substance does not cause genetic damage in animals.
- Sodium C10-13-alkylbenzenesulfonate : Did not cause genetic damage in cultured bacterial cells. Did not cause genetic damage in cultured mammalian cells. Animal testing did not show any mutagenic effects.
- Malic acid : Animal testing did not show any mutagenic effects. Evidence suggests this substance does not cause genetic damage in animals.
- Sulphamidic acid : Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
- Sodium toluenesulphonate : Animal testing did not show any mutagenic effects.
- Dipotassium peroxodisulphate : Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Information given is based on data obtained from similar substances.
- Dipentene : Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects.

Carcinogenicity

- Sodium C10-13-alkylbenzenesulfonate : Did not show carcinogenic effects in animal experiments.
- Malic acid : Not classifiable as a human carcinogen. Due to its physical properties, there is no potential for adverse effects.
- Sodium toluenesulphonate : Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects. Information given is based on data obtained from similar substances.
- Dipotassium peroxodisulphate : Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects. Information given is based on data obtained from similar substances.
- Dipentene : Not classifiable as a human carcinogen.

Reproductive toxicity

- Virkon® S : Reproductive toxicity: No toxicity to reproduction

Specific Target Organ Toxicity

Specific target organ toxicity - single exposure

- Pentapotassium bis(peroxymonosulphate) bis(sulphate) : The substance or mixture is not classified as specific target organ toxicant, single exposure.
- Dipotassium peroxodisulphate : Target Organs: Respiratory Tract
The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Specific target organ toxicity - repeated exposure

- Malic acid : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
- Sulphamidic acid : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
- Sodium toluenesulphonate : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
- Dipotassium peroxodisulphate : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
- Dipentene : The substance or mixture is not classified as specific target organ

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toxicant, repeated exposure.

Aspiration hazard

- Malic acid : No aspiration toxicity classification
- Sulphamidic acid : No aspiration toxicity classification
- Sodium toluenesulphonate : No aspiration toxicity classification
- Dipotassium peroxodisulphate : No aspiration toxicity classification

Other

- Sodium C10-13-alkylbenzenesulfonate : Repeated dose toxicity:
Oral
Reduced body weight gain, altered blood chemistry, Liver effects, Kidney effects
- Malic acid : Repeated dose toxicity:
Oral - feed/Rat
No toxicologically significant effects were found.
- Sulphamidic acid : Repeated dose toxicity:
Oral/Rat
Method: OECD Test Guideline 408
No toxicologically significant effects were found.
- Sodium toluenesulphonate : Repeated dose toxicity:
Oral/Rat 91 d
NOAEL: 114 mg/kg
Method: OECD Test Guideline 408
No toxicologically significant effects were found., Information given is based on data obtained from similar substances.
Dermal/Mouse 91 d
NOAEL: 440 mg/kg
Method: OECD Test Guideline 411
No toxicologically significant effects were found., Information given is based on data obtained from similar substances.
- Dipotassium peroxodisulphate : Repeated dose toxicity:
Oral/Rat
NOAEL: 131.5 mg/kg
Method: OECD Test Guideline 407
No toxicologically significant effects were found.
- Dipentene : Repeated dose toxicity:
multiple species
Organ weight changes, altered blood chemistry

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Acute and prolonged toxicity to fish

- Virkon® S : LC50/96 h/Salmo salar (Atlantic salmon): 24.6 mg/l
(Data on the product itself)

Toxicity to aquatic plants

- Virkon® S : EC50/72 h/Algae: 20 mg/l
(Data on the product itself)
NOEC/Algae: 6.25 mg/l

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(Data on the product itself)

Acute toxicity to aquatic invertebrates

Virkon® S : EC50/48 h/Daphnia magna (Water flea): 6.5 mg/l
(Data on the product itself)

Chronic toxicity to fish

Pentapotassium : NOEC/37 d/Cyprinodon variegatus (sheepshead minnow): 0.222 mg/l
bis(peroxymonosulphate)
bis(sulphate)

Chronic toxicity to aquatic Invertebrates

Pentapotassium : NOEC/28 d/Americamysis bahia (mysid shrimp): 0.267 mg/l
bis(peroxymonosulphate)
bis(sulphate)

Terrestrial Vertebrate and Invertebrate Ecotoxicity

Virkon® S : LD50/Rat: 4,123 mg/kg

Persistence and degradability

Virkon® S : Expected to be biodegradable

Bioaccumulation

Malic acid : Accumulation in aquatic organisms is unlikely.
Sodium toluenesulphonate : Bioconcentration factor (BCF): < 2.3
Method: OECD Test Guideline 305
Dipentene : Can accumulate in aquatic organisms.

Mobility in soil

No information available.

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods : Dispose of as special waste in compliance with local and national regulations. The product should not be allowed to enter drains, water courses or the soil.

Contaminated packaging : If recycling is not practicable, dispose of in compliance with local regulations.

14. TRANSPORT INFORMATION

Not classified as a Dangerous Good under NZS 5433

15. REGULATORY INFORMATION

HSNO Number : HSR002530

HSNO Controls : T1, T2, T4, T5, T7, T8
E1, E2, E6
I1, I2, I8, I9, I10, I11, I16, I17, I18, I19, I20, I21, I22, I28, I29, I30
P1, P3, P13, P14, PG3
D4, D5, D6, D7, D8
EM1, EM2, EM6, EM7, EM8, EM11, EM12, EM13

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16. OTHER INFORMATION**References**

SDS Number: 130000014173

Revision Date/Version

Date of first preparation : 09.07.2008

Revision Date : 02.02.2009

Version : 3.0

Significant change from previous version is denoted with a double bar.

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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The above information relates only to the specific material(s) designated herein and may not be valid for such material(s) used in combination with any other materials or in any process or if the material is altered or processed, unless specified in the text.