

SAFETY DATA SHEET



Virkon® S

Version 2.4

Revision Date 16.12.2014

Document no. 130000014173

This SDS adheres to the standards and regulatory requirements of Australia 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 : Du Pont (Australia) Pty Ltd
Street address : 7 Eden Park Drive
Macquarie Park NSW 2113
Australia

Telephone : (02) 9923 6111
Telefax : (02) 9923 6011

Emergency telephone number : (02) 9923 6275 (Transport Emergency)
(24 hr Emergency Medical Information: 1800 674 415)

2. HAZARDS IDENTIFICATION

Product hazard classification

Skin corrosion/irritation : Category 2
Serious eye damage/eye irritation : Category 1
Acute aquatic toxicity : Category 2

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

Label content

Pictogram :



Signal word : Danger

Hazardous warnings : Causes skin irritation.
Causes serious eye damage.
Toxic to aquatic life.

Precautionary statements : Wash skin thoroughly after handling.
Avoid release to the environment.
Wear eye protection/ face protection.
Wear protective gloves.
IF ON SKIN: Wash with plenty of soap and water.
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.

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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% |
| Sulphamic acid | 5329-14-6 | 4 - 6% |
| Sodium toluenesulphonate | 12068-03-0 | 1 - 5% |
| Dipotassium peroxodisulphate | 7727-21-1 | <3% |

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.

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)

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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

Storage period: Stable at normal ambient temperature and pressure.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

| Chemical Name | Occupational Exposure Limits | Regulation |
|---------------|------------------------------|------------|
|---------------|------------------------------|------------|

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| Dust (inhalable and respirable fraction) | | |
|--|---|--------------------|
| TWA | 10 mg/m ³ (Inhalable particles.) | US ACGIH (03 2013) |
| TWA | 3 mg/m ³ (Respirable particles.) | US ACGIH (03 2013) |
| Dipotassium peroxodisulphate | | |
| PEAK | 0.01 mg/m ³ | AU NOEL (12 2011) |
| PEAK | 0.01 mg/m ³ | AU OEL (08 2005) |
| 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)

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.

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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 : (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

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral

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

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| | | |
|--|---|--|
| Inhalation Virkon® S | : | The substance or mixture has no acute inhalation toxicity |
| 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 | : | Species: Rabbit Result: Irreversible effects on the eye Classification: Risk of serious damage to eyes. Method: OECD Test Guideline 405 |
| 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. |
| 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 | | |
| 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 | : | Animal testing did not show any mutagenic effects. Did not cause genetic damage in cultured bacterial cells. Genetic damage in cultured mammalian cells was observed in some laboratory tests but not in others. |
| 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. |

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- 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.

Carcinogenicity

- 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.

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.
 Sodium C10-13-alkylbenzenesulfonate : 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

- Sodium C10-13-alkylbenzenesulfonate : Likely route of exposure: Ingestion
 The substance or mixture is not classified as specific target organ toxicant, 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.

Aspiration hazard

- Sodium C10-13-alkylbenzenesulfonate : No aspiration toxicity classification
 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- : Repeated dose toxicity:

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| | |
|------------------------------|---|
| alkylbenzenesulfonate | Ingestion/Rat 28 d NOAEL: 125 mg/kg LOAEL: 250 mg/kg No toxicologically significant effects were found. |
| 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. |

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
(Data on the product itself)
EC50/72 h/Dunaliella tertiolecta: 5.54 mg/l

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 bis(peroxymonosulphate) : NOEC/37 d/Cyprinodon variegatus (sheepshead minnow): 0.222 mg/l
bis(sulphate)
Sodium C10-13- : NOEC/28 d/Lepomis macrochirus (Bluegill sunfish): 1 mg/l

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alkylbenzenesulfonate

Method: OECD Test Guideline 204

Chronic toxicity to aquatic Invertebrates

Pentapotassium bis(peroxymonosulphate) bis(sulphate) Sodium C10-13-alkylbenzenesulfonate : NOEC/28 d/Americamysis bahia (mysid shrimp): 0.267 mg/l
: NOEC/21 d/Daphnia magna (Water flea): 1.18 mg/l
Method: OECD Test Guideline 211

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

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 dangerous goods according to the ADG Code.

15. REGULATORY INFORMATION

SUSMP: Schedule 6

16. OTHER INFORMATION

References

SDS Number: 130000014173

Revision Date/Version

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

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