



Virkon® S Fragrance Free

Version 2.0

Revision Date 05/27/2015

Ref. 130000093830

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

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Virkon® S Fragrance Free
 Product Use : Disinfectant, Cleaning agent, For professional users only.

Restrictions on use : Do not use product for anything outside of the above specified uses
 Manufacturer/Supplier : DuPont
 1007 Market Street
 Wilmington, DE 19898
 United States of America

Product Information : 1-800-441-7515 (outside the U.S. 1-302-774-1000)
 Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)
 Transport Emergency : CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Product hazard category

Acute toxicity (Inhalation)	Category 4
Skin corrosion	Category 1B
Serious eye damage/eye irritation	Category 1
Respiratory sensitisation	Category 1
Skin sensitisation	Category 1

Label content

Pictogram :



**Virkon® S Fragrance Free**

Version 2.0

Revision Date 05/27/2015

Ref. 130000093830

Signal word : Danger

Hazardous warnings : Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Harmful if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Hazardous prevention measures : Do not breathe dust or mist.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
In case of inadequate ventilation wear respiratory protection.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing.
Rinse skin with water/ shower.
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/doctor.
If skin irritation or rash occurs: Get medical advice/ attention.
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician.
Wash contaminated clothing before reuse.
Store locked up.
Dispose of contents/ container to an approved waste disposal plant.

Other hazards

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 49.9935 %

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS


Virkon® S Fragrance Free

Version 2.0

Revision Date 05/27/2015

Ref. 130000093830

Component	CAS-No.	Concentration
The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.		
Pentapotassium bis(peroxymonosulphate) bis(sulphate)	70693-62-8	40 - 50 %
Sodium dodecylbenzenesulfonate	25155-30-0	10 - 20 %
Malic acid	6915-15-7	10 - 20 %
Sulfamic acid	5329-14-6	5 - 10 %
Dipotassium peroxodisulphate	7727-21-1	1 - 5 %
Potassium hydrogensulphate	7646-93-7	1 - 5 %
Dipotassium disulfate	7790-62-7	1 - 5 %

SECTION 4. FIRST AID MEASURES

- General advice : When symptoms persist or in all cases of doubt seek medical advice.
- Inhalation : Move to fresh air. Consult a physician if necessary.
- Skin contact : In case of contact, immediately flush skin with plenty of water. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Consult a physician if necessary.
- Eye contact : Rinse immediately with plenty of water and seek medical advice.

**Virkon® S Fragrance Free**

Version 2.0

Revision Date 05/27/2015

Ref. 130000093830

- Ingestion : Call a poison control center or doctor for treatment advice. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Do not give anything by mouth to an unconscious person.
- Most important symptoms/effects, acute and delayed : No applicable data available.
- Protection of first-aiders : If potential for exposure exists refer to Section 8 for specific personal protective equipment.
- Notes to physician : No applicable data available.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water spray, Dry powder, Alcohol-resistant foam
- Unsuitable extinguishing media : Carbon dioxide (CO₂)
- Specific hazards : No applicable data available.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Wear suitable protective equipment.
- Further information : Evacuate personnel to safe areas. Standard procedure for chemical fires.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

- Safeguards (Personnel) : Wear personal protective equipment. Avoid contact with skin and eyes.
- Environmental precautions : Prevent material from entering sewers, waterways, or low areas.
- Spill Cleanup : Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.



Virkon® S Fragrance Free

Version 2.0

Revision Date 05/27/2015

Ref. 130000093830

Accidental Release Measures : Dispose of in accordance with local regulations.

SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Avoid contact with skin, eyes and clothing. Do not get on clothing. Wash off with plenty of water. Wash clothing after use. Do not breathe dust. Avoid dust formation in confined areas. For personal protection see section 8. General industrial hygiene practice.
- Handling (Physical Aspects) : No applicable data available.
- Dust explosion class : No applicable data available.
- Storage : Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in original container.
Keep away from: Combustible material
No decomposition if stored and applied as directed.
- Storage period : No applicable data available.
- Storage temperature : No applicable data available.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Engineering controls : Provide local exhaust ventilation when handling material in bulk. Ensure adequate ventilation.
- Personal protective equipment
 - Respiratory protection : Provide adequate ventilation. Wear NIOSH approved respiratory protection as appropriate.
 - Hand protection : Material: Impervious gloves
Additional protection: No particular glove type is recommended, but nitrile may used.
 - Eye protection : Safety glasses with side-shields
 - Skin and body protection : Where there is potential for skin contact, have available and wear as appropriate, impervious gloves, apron, pants, jacket, hood and boots.
- Exposure Guidelines
Exposure Limit Values


Virkon® S Fragrance Free

Version 2.0

Revision Date 05/27/2015

Ref. 130000093830

Pentapotassium bis(peroxymonosulphate) bis(sulphate)			
AEL *	(DUPONT)	1 mg/m3	15 minute TWA
Sulfamic acid			
AEL *	(DUPONT)	0.5 mg/m3	8 & 12 hr. TWA
AEL *	(DUPONT)	1.5 mg/m3	15 minute TWA
Dipotassium peroxodisulphate			
TLV	(ACGIH)	0.1 mg/m3	TWA as persulfate

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	: solid
Form	: powder
Color	: yellow
Odor	: none
Odor threshold	: No applicable data available.
pH	: 2.4 - 2.7
Melting point/range	: No applicable data available.
Boiling point/boiling range	: No applicable data available.
Flash point	: does not flash
Evaporation rate	: No applicable data available.
Flammability (solid, gas)	: No applicable data available.
Upper explosion limit	: No applicable data available.

**Virkon® S Fragrance Free**

Version 2.0

Revision Date 05/27/2015

Ref. 130000093830

Lower explosion limit	:	No applicable data available.
Vapour Pressure	:	No applicable data available.
Vapour density	:	No applicable data available.
Specific gravity (Relative density)	:	1.07
Water solubility	:	65 g/l at 20 °C (68 °F)
Solubility(ies)	:	No applicable data available.
Partition coefficient: n-octanol/water	:	No applicable data available.
Auto-ignition temperature	:	No applicable data available.
Decomposition temperature	:	No applicable data available.
Viscosity, kinematic	:	No applicable data available.
Viscosity, dynamic	:	No applicable data available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No applicable data available.
Chemical stability	:	No applicable data available.
Possibility of hazardous reactions	:	No applicable data available.
Conditions to avoid	:	Protect from moisture.
Incompatible materials	:	Strong bases combustibles, Acids, oxidizers, Brass, Copper, Halogenated compounds, Cyanides, Heavy metal salts
Hazardous decomposition products	:	Sulphur dioxide , Chlorine

SECTION 11. TOXICOLOGICAL INFORMATION

Virkon® S Fragrance Free
Inhalation 4 h LC50 : 3.7 mg/l , Rat


Virkon® S Fragrance Free

Version 2.0

Revision Date 05/27/2015

Ref. 130000093830

Dermal LD50	:	2,200 mg/kg , Rat
Oral LD50	:	4,123 mg/kg , Rat
Skin irritation	:	Moderate skin irritation
Eye irritation	:	Risk of serious damage to eyes.
Sensitisation	:	Animal test did not cause sensitization by skin contact., Buehler TestGuinea pig
Pentapotassium bis(peroxymonosulphate) bis(sulphate)		
Mutagenicity	:	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.
Teratogenicity	:	Animal testing showed no developmental toxicity.
Sodium dodecylbenzenesulfonate		
Repeated dose toxicity	:	Ingestion Rat - NOAEL: > 220 mg/kg No toxicologically significant effects were found.
Carcinogenicity	:	Animal testing did not show any carcinogenic effects.
Mutagenicity	:	Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Teratogenicity	:	Animal testing showed no developmental toxicity.
Malic acid		
Repeated dose toxicity	:	Oral - feed Rat - No toxicologically significant effects were found.
Carcinogenicity	:	Not classifiable as a human carcinogen. Due to its physical properties, there is no potential for adverse effects.



Virkon® S Fragrance Free

Version 2.0

Revision Date 05/27/2015

Ref. 130000093830

Mutagenicity : Animal testing did not show any mutagenic effects.
Evidence suggests this substance does not cause genetic damage in animals.

Reproductive toxicity : No toxicity to reproduction
Due to its physical properties, there is no potential for adverse effects.

Teratogenicity : Animal testing showed no developmental toxicity.

Sulfamic acid

Repeated dose toxicity : Oral
Rat
- Method: OECD Test Guideline 408
No toxicologically significant effects were found.

Mutagenicity : Animal testing did not show any mutagenic effects.
Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Dipotassium peroxodisulphate

Repeated dose toxicity : Oral
Rat
-
NOAEL: 131.5 mg/kg Method: OECD Test Guideline 407
No toxicologically significant effects were found.

Carcinogenicity : Not classifiable as a human carcinogen.
Animal testing did not show any carcinogenic effects.
Information given is based on data obtained from similar substances.

Mutagenicity : 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.

Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.
Information given is based on data obtained from similar substances.

Teratogenicity : Animal testing showed no developmental toxicity.
Information given is based on data obtained from similar substances.

Potassium hydrogensulphate

Repeated dose toxicity : Oral



Virkon® S Fragrance Free

Version 2.0

Revision Date 05/27/2015

Ref. 130000093830

Rat
- 28 d

NOAEL: 1,000 mg/kg

No toxicologically significant effects were found., Information given is based on data obtained from similar substances.

- Mutagenicity** : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Evidence suggests this substance does not cause genetic damage in animals.
Information given is based on data obtained from similar substances.
- Reproductive toxicity** : No toxicity to reproduction
Information given is based on data obtained from similar substances.
- Teratogenicity** : No toxicity to reproduction
Information given is based on data obtained from similar substances.

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

Pentapotassium bis(peroxymonosulphate) bis(sulphate)

- 96 h LC50 : *Cyprinodon variegatus* (sheepshead minnow) 1.09 mg/l Directive 67/548/EEC, Annex V, C.1.
- 96 h ErC50 : *Selenastrum capricornutum* (green algae) > 1 mg/l OECD Test Guideline 201
- 72 h NOEC : *Selenastrum capricornutum* (green algae) 0.5 mg/l
- 48 h EC50 : *Daphnia magna* (Water flea) 3.5 mg/l OECD Test Guideline 202


Virkon® S Fragrance Free

Version 2.0

Revision Date 05/27/2015

Ref. 130000093830

37 d	:	NOEC Cyprinodon variegatus (sheepshead minnow) 0.222 mg/l
28 d	:	NOEC Americamysis bahia (mysid shrimp) 0.267 mg/l
Sodium dodecylbenzenesulfonate		
96 h LC50	:	Pimephales promelas (fathead minnow) 3.2 mg/l
72 h NOEC	:	Desmodesmus subspicatus (green algae) 7.7 mg/l
48 h EC50	:	Daphnia magna (Water flea) 4.1 mg/l
28 d	:	NOEC Pimephales promelas (fathead minnow) 0.87 mg/l
21 d	:	NOEC Daphnia magna (Water flea) 1.4 mg/l
Malic acid		
48 h EC50	:	Daphnia magna (Water flea) 240 mg/l
Sulfamic acid		
96 h LC50	:	Pimephales promelas (fathead minnow) 70.3 mg/l OECD Test Guideline 203 Information given is based on data obtained from similar substances.
72 h ErC50	:	Desmodesmus subspicatus (green algae) 48 mg/l OECD Test Guideline 201
72 h NOEC	:	Desmodesmus subspicatus (green algae) 18 mg/l OECD Test Guideline 201
48 h EC50	:	Daphnia magna (Water flea) 71.6 mg/l OECD Test Guideline 202
Dipotassium peroxodisulphate		
96 h LC50	:	Oncorhynchus mykiss (rainbow trout) 76.3 mg/l US EPA Test Guideline OPP 72-1 Information given is based on data obtained from similar substances.
72 h EbC50	:	Pseudokirchneriella subcapitata (green algae) 83.7 mg/l OECD Test Guideline 201 Information given is based on data obtained from similar substances.
72 h NOEC	:	Pseudokirchneriella subcapitata (green algae) 39.2 mg/l OECD Test Guideline 201 Information given is based on data obtained from similar substances.



Virkon® S Fragrance Free

Version 2.0

Revision Date 05/27/2015

Ref. 130000093830

48 h EC50 : Daphnia magna (Water flea) 120 mg/l US EPA Test Guideline OPP 72-2
Information given is based on data obtained from similar substances.

Potassium hydrogensulphate
96 h LC50 : Pimephales promelas (fathead minnow) 7,960 mg/l
Information given is based on data obtained from similar substances.

48 h EC50 : Daphnia magna (Water flea) 1,766 mg/l
Information given is based on data obtained from similar substances.

Environmental Fate

Malic acid

Biodegradability : Readily biodegradable

Bioaccumulation : Accumulation in aquatic organisms is unlikely.

Sulfamic acid

Biodegradability : Biodegradable
Not applicable

Dipotassium peroxodisulphate Biodegradability

: Readily biodegradable

Potassium hydrogensulphate Biodegradability

: The methods for determining biodegradability are not applicable to inorganic substances.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product : In accordance with local and national regulations. Do not flush into surface water or sanitary sewer system. Do not contaminate water, food or feed by disposal.

Contaminated packaging : No applicable data available.

SECTION 14. TRANSPORT INFORMATION


Virkon® S Fragrance Free

Version 2.0

Revision Date 05/27/2015

Ref. 130000093830

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. REGULATORY INFORMATION

TSCA (US) Status	: On the inventory, or in compliance with the inventory
SARA 313 Regulated Chemical(s)	: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
PA Right to Know Regulated Chemical(s)	: Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Sodium dodecylbenzenesulfonate, Dipotassium peroxodisulphate, Sodium sulphate
NJ Right to Know Regulated Chemical(s)	: Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Dipotassium peroxodisulphate, Potassium hydrogensulphate
CERCLA Reportable Quantity	: 7192 lbs Based on the percentage composition of this chemical in the product.: Sodium dodecylbenzenesulfonate
EPA Reg. No.	: 71654-6

In the United States this product is regulated by the US Environmental Protection Agency (EPA) under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPATSCA.

This Safety Data Sheet is for a pesticide product registered by the US Environmental Protection Agency (USEPA) and is therefore also subject to certain labeling requirements under US pesticide law (FIFRA). These requirements differ from the classification criteria and hazard information required by OSHA for safety data sheets, and for workplace labels of non-pesticide chemicals. The following is the mandatory hazard information required by USEPA on the pesticide label:



Virkon® S Fragrance Free

Version 2.0

Revision Date 05/27/2015

Ref. 130000093830

DANGER. Powder is corrosive. Causes irreversible eye damage or skin burns. Harmful if swallowed or absorbed through the skin . Do not get on skin or clothing. Wear goggles or face shield. Wear protective clothing (long sleeve shirt and long pants, socks plus shoes and chemical resistant gloves such as water proof gloves). Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before re-use. Corrosive statement refers to powder only not in use-diluted solution.

California Prop. 65 : Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

SECTION 16. OTHER INFORMATION

Virkon(R), The DuPont Oval Logo(R), and DuPont(TM) are registered trademarks or trademarks of E. I. du Pont de Nemours and Company or its affiliates.

Do not use for medical-clinical purposes.

Revision Date : 05/27/2015

Contact person : MSDS Coordinator, DuPont Chemicals and Fluoroproducts, Wilmington, DE 19898, (800) 441-7515

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.

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