

SAFETY DATA SHEET

PRODUCT NAME:

Virkon

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A Service of



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Version 2.0 Revision Date: 04/17/2019 SDS Number: 103000025451 Date of previous issue: 03/01/2019
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Take off contaminated clothing and wash it before reuse.

Hazard Not Otherwise Classified (HNOC)

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
pentapotassium bis(peroxymonosulphate) bis(sulphate)	70693-62-8	>= 30 - < 50
alkylarylsulphonate	68411-30-3	>= 10 - < 20
Butanedioic acid, 2-hydroxy-	6915-15-7	>= 5 - < 10
Sulphamic acid	5329-14-6	>= 1 - < 5
potassium hydrogen sulphate	7646-93-7	>= 1 - < 3
Dipotassium disulphate	7790-62-7	>= 1 - < 3
sodium toluenesulphonate	12068-03-0	>= 1 - < 5
Dipotassium peroxodisulphate	7727-21-1	>= 0.1 - < 1
dipentene	138-86-3	>= 0.1 - < 1

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

SECTION 4. FIRST AID MEASURES

- If inhaled : Get medical attention immediately.
Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If unconscious, place in recovery position and get medical attention immediately.
Maintain open airway.
If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- In case of skin contact : Wash off with soap and water.
Continue to rinse for at least 20 minutes.
Get medical attention if symptoms occur.
Wash contaminated clothing before reuse.
- In case of eye contact : Get medical attention immediately.
In case of contact, flush eyes with plenty of water for at least 30 minutes. Use fingers to ensure that eyelids are separated and that the eye is being irrigated.
Remove contact lenses, if present and easy to do. Continue rinsing.
Chemical burns must be treated promptly by a physician.
- If swallowed : Rinse mouth with water.
Do not induce vomiting unless directed to do by medical personnel.

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sonnel.
If vomiting occurs, the head should be kept low so that vomit does not enter the lungs.
Get medical attention immediately.
Chemical burns must be treated promptly by a physician.
Never give anything by mouth to an unconscious person.
Maintain open airway.

Most important symptoms and effects, both acute and delayed

Symptoms	:	Eye: Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage. Skin: Causes irritation with symptoms of reddening, itching, and swelling.
Effects	:	Causes skin irritation. Causes serious eye damage.
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. In case of fire, use water spray (fog), foam or dry chemical.
Unsuitable extinguishing media	:	Do not use water jet. Carbon dioxide (CO ₂)
Specific hazards during fire fighting	:	Water runoff from fire fighting may be corrosive. May release toxic, irritating and/or corrosive gases.
Hazardous combustion products	:	Sulfur oxides Metal oxides Carbon dioxide (CO ₂) Carbon monoxide Nitrogen oxides (NO _x) Halogenated compounds Phosphorus oxides
Further information	:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protection	:	No action shall be taken involving any personal risk or without
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- tive equipment and emergency procedures : suitable training.
Put on appropriate personal protection equipment.
Do not touch or walk through spilled material.
Evacuate personnel to safe areas.
Keep unnecessary and unprotected personnel from entering.
- 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 : Move containers from spill area.
Keep people away from and upwind of spill/leak.
Avoid dust formation.
Do not dry sweep.
Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container.
Dispose of wastes in an approved waste disposal facility.
-

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Remove contaminated clothing and protective equipment before entering eating areas.
Workers should wash hands and face before eating, drinking and smoking.
Put on appropriate personal protection equipment.
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.
Avoid inhalation, ingestion and contact with skin and eyes.
Use only with adequate ventilation.
- Conditions for safe storage : Protect from moisture.
Store in accordance with local regulations.
Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink.
Keep containers sealed until ready for use.
Containers that have been opened must be carefully resealed and kept upright to prevent leakage.
Do not store in unlabeled containers.
Use appropriate container to avoid environmental contamination.
Empty containers retain residue and can be dangerous.
Do not reuse container.
- Recommended storage temperature : < 50 °C
- Further information on storage stability : Keep in a dry place.
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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Dipotassium peroxodisulphate	7727-21-1	TWA	0.1 mg/m ³ (Persulphate)	ACGIH

Engineering measures : If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal protective equipment

Respiratory protection : Although no exposure limit has been established for this product, the OSHA PEL for Particulates Not Otherwise Regulated (PNOR) of 15 mg/m³ - total dust, 5 mg/m³ - respirable fraction is recommended. In addition, the ACGIH recommends 3 mg/m³ - respirable particles and 10 mg/m³ - inhalable particles for Particles (insoluble or poorly soluble) Not Otherwise Specified (PNOS).
The following respirator is recommended if airborne concentrations exceed the appropriate standard/guideline.
NIOSH approved, air-purifying particulate respirator with N-95 filters.

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

Eye protection : Safety glasses with side-shields
If inhalation hazards exist, a full-face respirator may be required instead.

Skin and body protection : Wear suitable protective clothing.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.
Appropriate techniques should be used to remove potentially contaminated clothing.
Wash contaminated clothing before reusing.
Ensure that eyewash stations and safety showers are close to the workstation location.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : solid

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Appearance : powder

Color : pink

Odor : pleasant, sweet

Odor 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

Vapor pressure : No data available

Relative vapor 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 : The substance or mixture is not classified as oxidizing.
Method: Regulation (EC) No. 440/2008, Annex, A.17

Molecular weight : No data available

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SECTION 10. STABILITY AND REACTIVITY

- Reactivity : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability : The product is chemically stable.
- Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
Stable under recommended storage conditions.
No hazards to be specially mentioned.
Dust may form explosive mixture in air.
- Conditions to avoid : Exposure to moisture.
- Incompatible materials : Incompatible with acids.
Combustible material
Oxidizing agents
Strong bases
brass
Cyanides
Copper
Halogenated compounds
Metal salt.
- Hazardous decomposition products : Oxygen
Chlorine
Sulfur oxides
Hypochlorites
-

SECTION 11. TOXICOLOGICAL INFORMATION

The most important known symptoms and effects are described in Section 2 and/or Section 4.

Information on likely routes of exposure

Eye contact
Skin contact
Ingestion

Acute toxicity

Not classified based on available information.

Product:

- Acute oral toxicity : LD50 (Rat, male and female): 4,123 mg/kg
Method: OECD Test Guideline 401
GLP: yes
- Acute inhalation toxicity : LC50 (Rat): 3.7 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
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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

alkylarylsulphonate:

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

Butanedioic acid, 2-hydroxy-:

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

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GLP: no

Sulphamic 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 hydrogen sulphate:

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

Causes skin irritation.

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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.

alkylarylsulphonate:

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

Butanedioic acid, 2-hydroxy-:

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

Sulphamic acid:

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

potassium hydrogen sulphate:

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.

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Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Species: Rabbit

Result: Risk of serious damage to eyes.

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

Species: Rabbit

Result: Risk of serious damage to eyes.

Method: OECD Test Guideline 405

alkylarylsulphonate:

Species: Rabbit

Result: Risk of serious damage to eyes.

Method: OECD Test Guideline 405

Butanedioic acid, 2-hydroxy-:

Species: Rabbit

Result: Irritating to eyes.

Method: OECD Test Guideline 405

Sulphamic 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 sensitization

Skin sensitization

Not classified based on available information.

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Respiratory sensitization

Not classified based on available information.

Product:

Routes of exposure: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Did not cause sensitization on laboratory animals.

Routes of exposure: Inhalation
Species: Mammal - species unspecified
Method: Expert judgment
Result: Does not cause respiratory sensitization.

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

Routes of exposure: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Does not cause skin sensitization.

alkylarylsulphonate:

Routes of exposure: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Did not cause sensitization on laboratory animals.

Butanedioic acid, 2-hydroxy-:

Routes of exposure: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Did not cause sensitization on laboratory animals.
GLP: yes

Sulphamic acid:

Result: Did not cause sensitization on laboratory animals.

sodium toluenesulphonate:

Routes of exposure: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Did not cause sensitization on laboratory animals.

Dipotassium peroxodisulphate:

Routes of exposure: Inhalation
Species: Mammal - species unspecified
Result: May cause sensitization by inhalation.

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Routes of exposure: Skin contact
Species: Mouse
Method: OECD Test Guideline 429
Result: May cause sensitization by skin contact.

dipentene:

Routes of exposure: Dermal
Species: Guinea pig
Result: May cause sensitization by skin contact.

Germ cell mutagenicity

Not classified based on available information.

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

alkylarylsulphonate:

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

Butanedioic acid, 2-hydroxy-:

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

Sulphamic 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

Not classified based on available information.

Components:

alkylarylsulphonate:

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

Reproductive toxicity

Not classified based on available information.

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

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

alkylarylsulphonate:

Effects on fetal development : Species: Rat, female
Application Route: Oral

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Dose: 600 milligram per kilogram
Duration of Single Treatment: 15 d
Remarks: No known significant effects or critical hazards.

Butanedioic acid, 2-hydroxy-:

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

STOT-single exposure

Not classified based on available information.

Components:

potassium hydrogen sulphate:

Assessment: May cause respiratory irritation.

Dipotassium peroxodisulphate:

Assessment: May cause respiratory irritation.

STOT-repeated exposure

Not classified based on available information.

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

alkylarylsulphonate:

Species: Rat, male and female
NOAEL: 50 mg/kg
Application Route: Oral
Exposure time: 84 d
Remarks: Subchronic toxicity

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Butanedioic acid, 2-hydroxy-:

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

Aspiration toxicity

Not classified based on available information.

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

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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

alkylarylsulphonate:

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 d
Method: OECD Test Guideline 204
GLP: no
Remarks: Fresh water

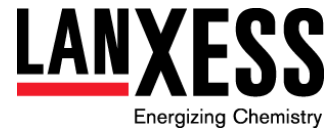
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 1.18 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211
GLP: no
Remarks: Fresh water

Butanedioic acid, 2-hydroxy-:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 100 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
GLP: yes

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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

Sulphamic 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

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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:

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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

Persistence and degradability

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

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

alkylarylsulphonate:

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

Butanedioic acid, 2-hydroxy-:

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

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GLP: yes

Sulphamic 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

alkylarylsulphonate:

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

Butanedioic acid, 2-hydroxy-:

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

Sulphamic acid:

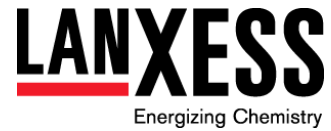
Partition coefficient: n-octanol/water : log Pow: -4.34

Mobility in soil

No data available

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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 : The generation of waste should be avoided or minimized wherever possible.
This material and its container must be disposed of in a safe way.
Empty containers retain product residue; observe all precautions for product.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Waste disposal should be in accordance with existing federal, state, provincial and/or local environmental controls.

SECTION 14. TRANSPORT INFORMATION

Domestic regulation

TDG

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.

SECTION 15. REGULATORY INFORMATION

DSL : All components of this product are on the Canadian DSL

Canadian lists

|| No substances are subject to a Significant New Activity Notification.

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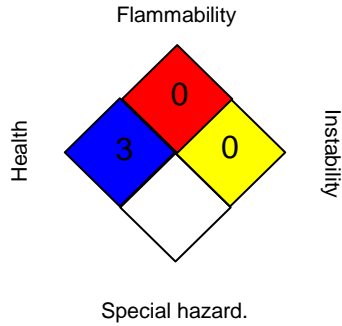
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Further information

NFPA:



HMIS® IV:

HEALTH	/	3
FLAMMABILITY		0
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

LANXESS' method of hazard communication is comprised of Product Labels and Safety Data Sheets. HMIS and NFPA ratings are provided by LANXESS as a customer service.

SECTION 16. OTHER INFORMATION

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This information is furnished without warranty, express or implied. This information is believed to be accurate to the best knowledge of our knowledge. The information provided in this Safety Data Sheet (SDS) is correct to the best of our knowledge, information and belief at the date of its publication. We assume no legal responsibility for use of or reliance upon the information in this SDS.