

# SAFETY DATA SHEET

## RELYON VIRKON



Version 1.0      Revision Date: 05/14/2021      SDS Number: 203000008670      Date of last issue: -  
Country / Language: US / EN

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### SECTION 1. IDENTIFICATION

Product name : RELYON VIRKON  
Product code : 00000000057768022

#### Manufacturer or supplier's details

Company : LANXESS Corporation  
Product Safety & Regulatory Affairs  
111 RIDC Park West Drive  
Pittsburgh, Pennsylvania 15275-1112

Responsible Department : (800) LANXESS  
(412) 809-1000  
lanxesshes@lanxess.com

Emergency telephone : CHEMTREC (800) 424-9300 or  
(703) 527-3887 (Outside U.S.A) and mention CCN12916.  
Lanxess Emergency Phone (800) 410-3063.

#### Recommended use of the chemical and restrictions on use

Recommended use : Disinfectants


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### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Skin irritation : Category 2  
Serious eye damage : Category 1

#### GHS label elements

Hazard pictograms : 

Signal Word : Danger  
Hazard Statements : Causes skin irritation.  
Causes serious eye damage.

Precautionary Statements : **Prevention:**  
Wash skin thoroughly after handling.  
Wear protective gloves/ eye protection/ face protection.

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### Response:

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/ doctor.  
If skin irritation occurs: Get medical advice/ attention.  
Take off contaminated clothing and wash before reuse.

### Other hazards

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	CAS-No.	Concentration (% w/w)
pentapotassium bis(peroxymonosulphate) bis(sulphate)	70693-62-8	>= 30 - < 50
Benzenesulfonic acid, mono-C10-13-alkyl derivs., sodium salts	90194-45-9	>= 10 - < 20
malic acid	6915-15-7	>= 5 - < 10
sulphamidic acid	5329-14-6	>= 1 - < 5
sodium toluenesulphonate	12068-03-0	>= 1 - < 5
potassium hydrogensulphate	7646-93-7	>= 1 - < 5
dipotassium peroxodisulphate	7727-21-1	>= 1 - < 5
dipotassium disulphate	7790-62-7	>= 1 - < 5
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 : If inhaled, remove to fresh air.  
Get medical attention if symptoms appear.

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

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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.  
Get medical attention if symptoms occur.

### Most important symptoms and effects, both acute and delayed

Effects : Causes skin irritation.  
Causes serious eye damage.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

Notes to physician : Treat symptomatically.

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## 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<sub>2</sub>)

Hazardous combustion products : Sulfur oxides  
Metal oxides  
Carbon dioxide (CO<sub>2</sub>)  
Carbon monoxide  
Nitrogen oxides (NO<sub>x</sub>)  
Halogenated compounds

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.

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : No action shall be taken involving any personal risk or without 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.

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- Provide adequate ventilation.  
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 : 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.

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### 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 : Remove contaminated clothing and protective equipment be-  
fore 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 : 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 container closed when not in 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 contamina-  
tion.  
Empty containers retain residue and can be dangerous.  
Do not reuse container.
- Materials to avoid : Keep away from alkalis.
- Further information on stor-  
age 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 <sup>3</sup> (Persulphate)	ACGIH

**Engineering measures** : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

#### Personal protective equipment

**Respiratory protection** : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. 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

**Appearance** : powder

**Physical state** : solid

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Color : pink

Odor : pleasant, sweet

Odor Threshold : No data available

pH : 2.35 - 2.65  
Concentration: 1 %

Melting point/range : No data available

Boiling point/boiling range : No data available

Flash point : No data available

Evaporation rate : No data available

Self-ignition : No data available

Burning number : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : No data available

Relative density : No data available

Density : 1.07 g/cm<sup>3</sup> (68 °F / 20 °C)

Solubility(ies)  
Water solubility : 65 g/l

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Decomposition temperature : > 122 °F / > 50 °C

Viscosity  
Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Explosive properties : No data available

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Oxidizing properties : The product has been shown not to be oxidizing in a test following Directive 67/548/EEC (Method A17, oxidizing properties).  
Method: Regulation (EC) No. 440/2008, Annex, A.17

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

Conditions to avoid : Exposure to moisture.

Hazardous decomposition products : Oxygen  
Chlorine  
Sulfur oxides  
Hypochlorites

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### SECTION 11. TOXICOLOGICAL INFORMATION

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

#### Acute toxicity

Not classified based on available information.

#### 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.

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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, mono-C10-13-alkyl derivs., sodium salts:**

Acute oral toxicity : LD50 (Rat, male and female): 1,080 mg/kg

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg

#### **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, female): 2,140 mg/kg  
Method: OECD Test Guideline 401  
GLP: yes

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg



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Method: OECD Test Guideline 402  
GLP: yes  
Assessment: The substance or mixture has no acute dermal toxicity

### **sodium toluenesulphonate:**

Acute oral toxicity : LD50 (Rat): 6,500 mg/kg  
Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

### **potassium hydrogensulphate:**

Acute oral toxicity : LD50 (Rat): 2,340 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

### **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.

### **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.

### **Product:**

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

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### **Components:**

#### **pentapotassium bis(peroxymonosulphate) bis(sulphate):**

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

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

Species : Rabbit  
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.

#### **sodium toluenesulphonate:**

Species : Rabbit  
Result : Irritating to skin.

#### **potassium hydrogensulphate:**

Assessment : Causes burns.

#### **dipotassium peroxodisulphate:**

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

#### **dipotassium disulphate:**

Assessment : Causes severe burns.

#### **dipentene:**

Assessment : Irritating to skin.

#### **Serious eye damage/eye irritation**

Causes serious eye damage.

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### **Components:**

#### **pentapotassium bis(peroxymonosulphate) bis(sulphate):**

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

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

Species : Rabbit  
Result : Risk of serious damage to eyes.

#### **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

#### **sodium toluenesulphonate:**

Species : Rabbit  
Result : Irritating to eyes.

#### **dipotassium peroxodisulphate:**

Result : Irritating to eyes.

#### **dipotassium disulphate:**

Assessment : Risk of serious damage to eyes.

#### **dipentene:**

Species : Rabbit  
Result : Irritating to eyes.

### **Respiratory or skin sensitization**

#### **Skin sensitization**

Not classified based on available information.

#### **Respiratory sensitization**

Not classified based on available information.

### **Product:**

Routes of exposure : Skin contact  
Species : Guinea pig

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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.

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

Routes of exposure : Skin contact  
Species : Guinea pig  
Result : Did not cause sensitization on laboratory animals.

#### **malic acid:**

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

#### **sulphamidic 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.

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

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### **dipentene:**

Test Type : Maximization Test  
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

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

Genotoxicity in vitro : Test system: Bacteria  
Method: OECD Test Guideline 471  
Result: negative

Test system: Mammalian-Animal  
Method: OECD Test Guideline 476  
Result: negative

Test system: Mammalian-Animal  
Method: OECD Test Guideline 473  
Result: negative

Test system: Mammalian-Animal  
Method: OECD Test Guideline 475

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Result: negative

Test system: Mammalian-Animal  
Method: OECD Test Guideline 474  
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

Not classified based on available information.

**IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP** No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

### Reproductive toxicity

Not classified based on available information.

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### Components:

#### **pentapotassium bis(peroxymonosulphate) bis(sulphate):**

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

#### **malic acid:**

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

#### **STOT-single exposure**

Not classified based on available information.

### Components:

#### **potassium hydrogensulphate:**

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

#### **malic acid:**

Remarks : No known significant effects or critical hazards.

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### **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

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## 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

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/aquatic plants : 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

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Toxicity to algae/aquatic plants : 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, mono-C10-13-alkyl derivs., sodium salts:**

Toxicity to fish : LC50 (Fish): 1.67 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia): 2.9 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (algae): 29 mg/l  
Exposure time: 96 h

EC50 (Artemia salina): 3.1 mg/l  
Exposure time: 15 Days

Toxicity to fish (Chronic toxicity) : NOEC (Fish): 3.2 mg/l  
Exposure time: 28 Days

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC50 (Daphnia): 1.18 mg/l  
Exposure time: 21 Days

Toxicity to microorganisms : EC50 (Bacteria): 550 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209

### **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

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

NOEC (Desmodesmus subspicatus (green algae)): 18 mg/l  
End point: Growth rate  
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  
End point: Respiration inhibition  
Exposure time: 3 h

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Method: OECD Test Guideline 209  
GLP: yes  
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/aquatic plants : 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/aquatic plants : 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.

### **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/aquatic plants : EC50 (Pseudokirchneriella subcapitata (microalgae)): 1,492 mg/l

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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

### **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

### **Persistence and degradability**

#### **Components:**

##### **pentapotassium bis(peroxymonosulphate) bis(sulphate):**

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

##### **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.

##### **sodium toluenesulphonate:**

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 0 - 2 %

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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.

### **dipotassium disulphate:**

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

#### **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.

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### SECTION 13. DISPOSAL CONSIDERATIONS

#### Disposal methods

RCRA - Resource Conservation and Recovery Authorization Act : If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

Waste from residues : 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.

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### SECTION 14. TRANSPORT INFORMATION

#### 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.

#### Domestic regulation

##### 49 CFR

Not regulated as a dangerous good

#### Hazard and Handling Notes.

Not dangerous cargo, Keep dry., Keep separated from foodstuffs

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### SECTION 15. REGULATORY INFORMATION

#### CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

#### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

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**SARA 311/312 Hazards** : Skin corrosion or irritation  
Serious eye damage or eye irritation

**SARA 313** : 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.

### US State Regulations

#### Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

#### Pennsylvania Right To Know

pentapotassium bis(peroxymonosulphate) bis(sulphate)	70693-62-8	>= 30 - < 50
Polyphosphoric acids, sodium salts	68915-31-1	> 1
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts	68411-30-3	>= 10 - < 20
malic acid	6915-15-7	>= 5 - < 10
sulphamidic acid	5329-14-6	>= 1 - < 5
dipotassium peroxodisulphate	7727-21-1	>= 1 - < 3

#### California Prop. 65

WARNING: This product can expose you to chemicals including 7-methyl-3-methyleneocta-1,6-diene, which is/are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

#### TSCA inventory

TSCA : This product is regulated under the United States Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).

#### TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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## SECTION 16. OTHER INFORMATION

### Further information

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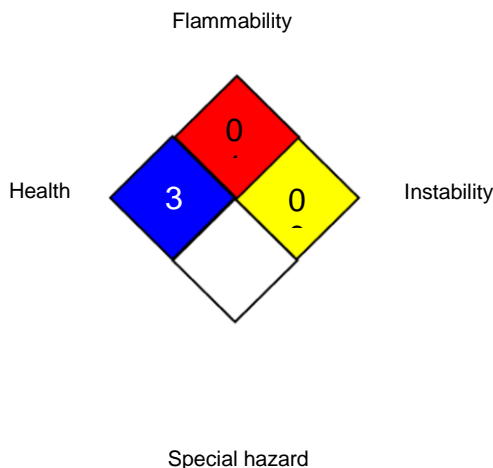
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### NFPA 704:



### 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.

### Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
ACGIH / TWA : 8-hour, time-weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable



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Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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The data contained in this Safety Data Sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. 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 to be a guidance for processing and does not contain any 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. It is the responsibility of the recipient of the product to ensure that any proprietary rights and existing laws and legislation are observed.