SAFETY DATA SHEET

RELYON VIRKON

Version	Revision Date:	SDS Number:	Date of previous issue: 03/13/2020
3.0	03/20/2020	103000008299	Country / Language: US / EN

SECTION 1. IDENTIFICATION

Product name	:	RELYON VIRKON
Material number	:	57768022
Recommended use	:	Disinfectants

Manufacturer or supplier's details

Supplier	:	LANXESS Corporation Product Safety & Regulatory Affairs 111 RIDC Park West Drive PittsburghPA 15275-1112 USA
Telephone	:	+1800LANXESS +14128091000 (international)
Emergency telephone	:	CHEMTREC (800) 424 9300 International (703) 527 3887 Lanxess Emergency Phone (800) 410-3063

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. **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.

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
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts	68411-30-3	>= 10 - < 20
malic acid	6915-15-7	>= 5 - < 10
sulphamic acid	5329-14-6	>= 1 - < 5
sodium toluenesulphonate	12068-03-0	>= 1 - < 5
potassium hydrogen sulphate	7646-93-7	>= 1 - < 3
Dipotassium peroxodisulphate	7727-21-1	>= 1 - < 5
dipotassium disulphate	7790-62-7	>= 1 - < 3
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 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

Symptoms	:	Eye: Causes irritation with symptoms of reddening, tearing, stinging, and swelling. 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 (CO2)
Specific hazards during fire fighting	:	Toxic and irritating gases/fumes may be given off during burning or thermal decomposition. Water runoff from fire fighting may be corrosive.
Hazardous combustion products	:	Phosphorus oxides Sulfur oxides Metal oxides Carbon dioxide (CO2) Carbon monoxide Nitrogen oxides (NOx) 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.

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. 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.

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	:	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 contamination. Empty containers retain residue and can be dangerous. Do not reuse container.
Further information on storage stability	:	Keep in a dry place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Hazardous components without 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/m3 (Persulphate)	ACGIH

Hazardous components without workplace control parameters

Components	CAS-No.
pentapotassium bis(peroxymonosulphate) bis(sulphate)	70693-62-8
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts	68411-30-3
malic acid	6915-15-7
sulphamic acid	5329-14-6
sodium toluenesulphonate	12068-03-0
potassium hydrogen sulphate	7646-93-7
dipotassium disulphate	7790-62-7
dipentene	138-86-3

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

Physical state : solid

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 (68 °F (20 °C))
Solubility(ies) Water solubility	: :	 65 g/l
Partition coefficient: n-octanol/water	:	No data available
Ignition temperature	:	No data available
Decomposition temperature	:	> 122 °F (> 50 °C)
Viscosity	:	No data available
Explosive properties	:	No data available
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

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	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Exposure to moisture.
Incompatible materials	:	Strong bases Combustible material Acids Oxidizing agents brass Copper Halogenated compounds Cyanides Heavy metal salts
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): 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.

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

Acute oral toxicity : LD50 (Rat, male and female): 1,080 mg/kg
Method: OECD Test Guideline 401
GLP: no

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
GLP: yes
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Dosage caused no mortality

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

sulphamic 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 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 hydrogen sulphate:

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.

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

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

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

Species: Rabbit
Method: OECD Test Guideline 404
Result: Irritating to skin.
GLP: no

malic acid:

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

sulphamic acid:

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

sodium toluenesulphonate:

Species: Rabbit
Result: Irritating to skin.

potassium hydrogen sulphate:

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.

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

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

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

Species: Rabbit
Result: Irreversible effects on the eye
Method: OECD Test Guideline 405
GLP: yes

malic acid:

Species: Rabbit
Result: Irritating to eyes.
Method: OECD Test Guideline 405

sulphamic 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

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

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

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

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.

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

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

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Metabolic activation: without metabolic activation
Method: OECD Test Guideline 473
Result: negative
GLP: yes

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster ovary cells
Metabolic activation: with metabolic activation
Method: OECD Test Guideline 473
Result: positive
GLP: yes

Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: yes

Genotoxicity in vivo : Test Type: Cytogenetic assay
Species: Mouse (male)
Cell type: Bone marrow
Application Route: Oral
Result: negative
GLP: no

Test Type: dominant lethal test
Species: Mouse (male)
Application Route: Oral
Result: negative
GLP: no

malic acid:

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.

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.

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

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

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

Effects on fertility : Test Type: Three-generation study
Species: Rat, male and female
Application Route: Oral
Dose: 0 - 14 - 70 - 350 milligram per kilogram
General Toxicity Parent: NOAEL: 350 mg/kg body weight
General Toxicity F1: NOAEL: 350 mg/kg body weight
General Toxicity F2: NOAEL: 350 mg/kg body weight
Fertility: NOAEL: 350 mg/kg body weight
Result: Animal testing did not show any effects on fertility.
GLP: no
Remarks: Test results on an analogous product

Effects on fetal development : Species: Rat, female
Application Route: Oral
General Toxicity Maternal: NOAEL: 300 mg/kg body weight
Teratogenicity: NOAEL: 300 mg/kg body weight
Result: No teratogenic effects.
GLP: no
Remarks: Test results on an analogous product

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 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

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

Species: Rat, male and female
NOAEL: 85 mg/kg
LOAEL: 145 mg/kg
Application Route: Oral
Exposure time: 36 w
Number of exposures: daily
GLP: no
Remarks: Subchronic toxicity

malic acid:

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
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 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

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

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 2.88 mg/l Exposure time: 96 h Analytical monitoring: yes Method: OECD Test Guideline 203 GLP: no Remarks: Fresh water
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 2.9 mg/l Exposure time: 48 h Analytical monitoring: yes Method: OECD Test Guideline 202 GLP: yes Remarks: Fresh water
Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 235 mg/l Exposure time: 72 h Analytical monitoring: no Method: OECD Test Guideline 201 GLP: no Remarks: Fresh water EC10 (Pseudokirchneriella subcapitata (green algae)): 13.1 mg/l Exposure time: 72 h Analytical monitoring: no Method: OECD Test Guideline 201 GLP: no Remarks: Fresh water
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 0.23 mg/l Exposure time: 72 d Analytical monitoring: yes Method: OECD Test Guideline 210 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 Analytical monitoring: yes Method: OECD Test Guideline 211 GLP: no Remarks: Fresh water

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
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 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 tox-	:	NOEC (Danio rerio (zebra fish)): >= 60 mg/l

icity)		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 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	:	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	:	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	:	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

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.

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

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 83 % Exposure time: 28 d Method: OECD Test Guideline 301B GLP: yes

malic acid:

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

sulphamic 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 %
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

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

Partition coefficient: n-octanol/water : log Pow: 1.4 (23 °C)
Method: OECD Test Guideline 123

malic acid:

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

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

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)
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

DOT

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

CERCLA

None

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.

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
sulphamic 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.

Any chemical(s) listed above which do not appear elsewhere on this SDS are contained in this product at concentrations below 0.01%.

TSCA inventory

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

TSCA list

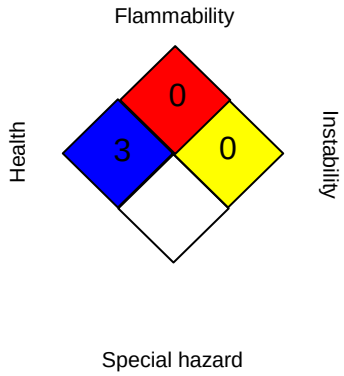
No substances are subject to a Significant New Use Rule.

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

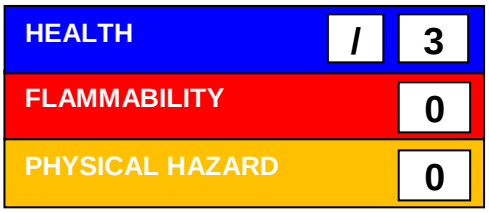
SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS® IV:



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.

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