RELYON VIRKON

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6.0	08.12.2022	203000008670	Country / Language: GB / 6N (EN)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : RELYON VIRKON

Product code : 000000000057768022

UFI : T6M6-00A8-V00M-133W

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Disinfectants

1.3 Details of the supplier of the safety data sheet

Company : Antec International Limited
Windham Road
CO10 2XD Sudbury / Suffolk
Chilton Industrial Estate, Great Britain

Responsible Department : +49 221 8885 2288
infosds@lanxess.com

1.4 Emergency telephone number

Emergency telephone number : For 24/7 multilingual emergency please call CHEMTREC EMEA: +44 20 3885 0382 and mention CCN1018725.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Skin irritation, Category 2	H315: Causes skin irritation.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Long-term (chronic) aquatic hazard, Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Hazard pictograms :

Signal word : Danger

Hazard statements :
H315 Causes skin irritation.
H318 Causes serious eye damage.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338 + P310 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.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:

pentapotassium bis(peroxymonosulphate) bis(sulphate)
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts
potassium hydrogensulphate

Additional Labelling

EUH208 Contains dipotassium peroxodisulphate, dipentene. May produce an allergic reaction.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
pentapotassium bis(peroxymonosulphate) bis(sulphate)	70693-62-8 274-778-7	Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318 Aquatic Chronic 3; H412	>= 30 - < 50
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts	68411-30-3 270-115-0	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 3; H412	>= 10 - < 20
malic acid	6915-15-7 230-022-8	Eye Irrit. 2; H319	>= 1 - < 10
sulphamidic acid	5329-14-6 226-218-8 016-026-00-0	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Aquatic Chronic 3; H412	>= 2.5 - < 10
potassium hydrogensulphate	7646-93-7 231-594-1 016-056-00-4	Skin Corr. 1B; H314 Eye Dam. 1; H318 STOT SE 3; H335 (Respiratory system)	>= 1 - < 3
sodium toluenesulphonate	12068-03-0 235-088-1	Skin Irrit. 2; H315 Eye Irrit. 2; H319	>= 1 - < 10
dipotassium peroxodisulphate	7727-21-1 231-781-8 016-061-00-1	Ox. Sol. 3; H272 Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335 (Respiratory system)	>= 0.1 - < 1
dipentene	138-86-3 205-341-0 601-029-00-7	Flam. Liq. 3; H226 Skin Irrit. 2; H315 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1;	>= 0.1 - < 0.25

		H410 _____ M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

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

If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : If skin irritation persists, call a physician.
If on skin, rinse well with water.
If on clothes, remove clothes.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.
Do NOT induce vomiting.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed

Risks : Causes skin irritation.
Causes serious eye damage.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : In case of fire, use water spray (fog), foam or dry chemical.

Unsuitable extinguishing media : Carbon dioxide (CO2)
High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Sulphur oxides
Metal oxides
Carbon dioxide (CO2)
Carbon monoxide
Nitrogen oxides (NOx)
Halogenated compounds

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Avoid dust formation.
Avoid breathing dust.

6.2 Environmental precautions

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.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Neutralize with chalk, alkali solution or ammonia. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For personal protection see section 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	Protect from moisture. Avoid formation of respirable particles. Do not breathe vapours/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.
Advice on protection against fire and explosion	:	Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Protect from moisture. Combustible substances Strong bases Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.
Advice on common storage	:	Keep away from alkalis.
Further information on storage stability	:	Keep in a dry place. No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s)	:	No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures

If user operations generate dust, fumes, gas, vapour 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

Eye protection	:	Tightly fitting safety goggles
Hand protection		
Material	:	Butyl rubber - IIR
Wearing time	:	< 60 min
Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves. After contamination with product change the gloves immediately and dispose of them according to relevant national and local regulations
Skin and body protection	:	Wear suitable protective clothing. Dust impervious protective suit Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory protection	:	In the case of dust or aerosol formation use respirator with an approved filter.
Filter type	:	Recommended Filter type: ABEK-P2-filter

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	powder
Physical state	:	solid
Colour	:	pink
Odour	:	pleasant, sweet

Odour Threshold	:	No data available
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	No data available
Decomposition temperature	:	> 50 °C
pH	:	2.35 - 2.65 Concentration: 1 %
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Solubility(ies)		
Water solubility	:	65 g/l
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Vapour pressure	:	No data available
Relative density	:	No data available
Density	:	1.07 g/cm3 (20 °C)

9.2 Other information

Explosives	:	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
Flammable solids		
Burning number	:	No data available

Self-ignition	:	No data available
Evaporation rate	:	No data available
Miscibility with water	:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

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.

10.4 Conditions to avoid

Conditions to avoid : Exposure to moisture

10.5 Incompatible materials

Materials to avoid : Incompatible with acids.
Strong bases
Combustible substances
Halogenated compounds
Oxidizing agents
brass
Copper
Cyanides
Metal salt.

10.6 Hazardous decomposition products

Hazardous decomposition products : Oxygen
Chlorine
Sulphur oxides
Hypochlorites

SECTION 11: Toxicological information

11.1 Information on toxicological effects

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

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

potassium hydrogensulphate:

Acute oral toxicity : LD50 (Rat): 2,340 mg/kg

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.

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

sulphamidic acid:

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

potassium hydrogensulphate:

Assessment : Causes 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.

Serious eye damage/eye irritation

Causes serious eye damage.

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

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

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

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

malic acid:

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

sulphamidic acid:

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

sodium toluenesulphonate:

Species	:	Rabbit
Result	:	Irritating to eyes.

dipotassium peroxodisulphate:

Result	:	Irritating to eyes.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Product:

Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Did not cause sensitisation on laboratory animals.

Exposure routes	:	Inhalation
Species	:	Mammal - species unspecified
Method	:	Expert judgement
Result	:	Does not cause respiratory sensitisation.

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.

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

Test Type	:	Maximisation Test
Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Did not cause sensitisation on laboratory animals.
GLP	:	yes

malic acid:

Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Did not cause sensitisation on laboratory animals.
GLP	:	yes

sulphamidic acid:

Result	:	Did not cause sensitisation on laboratory animals.

sodium toluenesulphonate:

Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Did not cause sensitisation on laboratory animals.

dipotassium peroxodisulphate:

Exposure routes	:	Inhalation
Species	:	Mammal - species unspecified
Result	:	May cause sensitisation by inhalation.
Exposure routes	:	Skin contact
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	May cause sensitisation by skin contact.

dipentene:

Test Type	:	Maximisation Test
Exposure routes	:	Dermal
Species	:	Guinea pig
Result	:	May cause sensitisation by skin contact.
Species	:	Mouse
Result	:	Causes sensitisation.

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.

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.

Reproductive toxicity

Not classified based on available information.

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

Effects on foetal development : Remarks: No teratogenic or foetotoxic 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 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 foetal 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 foetal 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

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

12.1 Toxicity

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

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, 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/aquatic plants : 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: 0.23 mg/l Exposure time: 72 d Species: Oncorhynchus mykiss (rainbow trout) Analytical monitoring: yes Method: OECD Test Guideline 210 GLP: no Remarks: Fresh water
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 1.18 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) 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/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	:	EC50 (Daphnia magna (Water flea)): 71.6 mg/l

aquatic invertebrates		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 microorganisms	:	EC50 : > 200 mg/l End point: Respiration inhibition Exposure time: 3 h Method: OECD Test Guideline 209 GLP: yes Remarks: Fresh water
Toxicity to fish (Chronic toxicity)	:	NOEC: >= 60 mg/l Exposure time: 34 d Species: Danio rerio (zebra fish) Method: OECD Test Guideline 210
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 19 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

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.

dipentene:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 0.702 mg/l Exposure time: 96 h Remarks: Fresh water LC50 (Oryzias latipes (Japanese medaka)): 1.1 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0.7 mg/l Exposure time: 48 h Remarks: Fresh water
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): > 1.6 mg/l Exposure time: 72 h EC50 (Selenastrum capricornutum (green algae)): > 1.81 mg/l Exposure time: 96 h NOEC (Pseudokirchneriella subcapitata (green algae)): 1.6 mg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0.27 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
M-Factor (Chronic aquatic	:	1

toxicity)

12.2 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 : Test Type: 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 %
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: Readily biodegradable.
Method: OECD Test Guideline 301C

12.3 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

sulphamidic acid:

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

dipentene:

Partition coefficient: n-octanol/water : log Pow: 4.57

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 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

13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14: Transport information

14.1 UN number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Hazard and Handling Notes. : Not dangerous cargo.
Risk of serious damage to eyes.
Irritating to skin.
Keep dry.
Keep separated from foodstuffs.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Relevant EU provisions transposed through retained EU law

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, : Not applicable

mixtures and articles (Annex XVII)

International Chemical Weapons Convention (CWC) Schedules of Toxic Chemicals and Precursors	:	Not applicable
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
Council Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors.	:	Neither banned nor restricted
UK REACH List of substances subject to authorisation (Annex XIV)	:	Not applicable
GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation	:	Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

15.2 Chemical safety assessment

No data available

SECTION 16: Other information

Full text of H-Statements

H226	:	Flammable liquid and vapour.
H272	:	May intensify fire; oxidizer.
H302	:	Harmful if swallowed.
H314	:	Causes severe skin burns and eye damage.
H315	:	Causes skin irritation.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H334	:	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	:	May cause respiratory irritation.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.

H412 : Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Flam. Liq.	:	Flammable liquids
Ox. Sol.	:	Oxidizing solids
Resp. Sens.	:	Respiratory sensitisation
Skin Corr.	:	Skin corrosion
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation
STOT SE	:	Specific target organ toxicity - single exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; 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; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; 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; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals 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

Classification of the mixture:		**Classification procedure:**
Skin Irrit. 2	H315	Based on product data or assessment

RELYON VIRKON

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Eye Dam. 1	H318	Calculation method
Aquatic Chronic 3	H412	Calculation method

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.