BIOVX

Version	Revision Date:	SDS Number:	Date of last issue: 07.03.2024
1.1	12.06.2024	203000023676	Country / Language: GB / 6N (EN)

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

1.1 Product identifier

Trade name : BIOVX

Product code : 000000000062647587

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 corrosion, Category 1	H314: Causes severe skin burns and eye damage.
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 :
H314 Causes severe skin burns and eye damage.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P260 Do not breathe dust.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
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.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

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)
Reaction product of Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs. and Benzenesulfonic acid, 4-methyl- and sodium hydroxide
potassium hydrogensulphate

Additional Labelling

EUH208 Contains dipotassium peroxodisulphate, (R)-p-mentha-1,8-diene. 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	>= 50 - < 70
Reaction product of Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs. and Benzenesulfonic acid, 4-methyl- and sodium hydroxide	Not Assigned 932-051-8	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 (Impurity)	7646-93-7 231-594-1 016-056-00-4	Skin Corr. 1B; H314 Eye Dam. 1; H318 STOT SE 3; H335 (Respiratory system)	>= 3 - < 5
dipotassium peroxodisulphate (Impurity)	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)	>= 1 - < 10
(R)-p-mentha-1,8-diene	5989-27-5 227-813-5 601-096-00-2	Flam. Liq. 3; H226 Skin Irrit. 2; H315 Skin Sens. 1; H317	>= 0.1 - < 0.25

			Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 1	

For explanation of abbreviations see section 16.
Disclaimer: EC numbers starting with 6, 7, 8, or 9 in this document are ECHA List Numbers used for internal reference and do not carry legal significance as typical EC Numbers in Safety Data Sheets.

SECTION 4: First aid measures

4.1 Description of first aid measures

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

Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
No action shall be taken involving any personal risk or without suitable training.

If inhaled : If breathed in, move person into fresh air.
If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
If unconscious, place in recovery position and get medical attention immediately.
Keep the respiratory tract free.
Loosen tight clothing such as a collar, tie, belt or waistband.
Get medical attention.

In case of skin contact : Chemical burns must be treated promptly by a physician.
Take off contaminated clothing and shoes immediately.
Wash off immediately with plenty of water for at least 15 minutes.

In case of eye contact : Chemical burns must be treated promptly by a physician.
Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids.
Keep eye wide open while rinsing.
Continue to rinse for at least 10 minutes.
Remove contact lenses.
Protect unharmed eye.
Continue rinsing eyes during transport to hospital.

If swallowed	:	DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Rinse mouth with water. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. If unconscious, place in recovery position and get medical attention immediately. Keep respiratory tract clear. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Risks	:	Causes serious eye damage. Causes severe burns.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	Treat symptomatically. Keep warm and in a quiet place. Effects may be delayed.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	:	High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting	:	In a fire or if heated, a pressure increase will occur and the container may burst. Harmful to aquatic life with long lasting effects. Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Sulphur oxides Metal oxides Carbon monoxide Carbon dioxide (CO2) Nitrogen oxides (NOx) Halogenated compounds

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

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.
Use a water spray to cool fully closed containers.
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 : 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 spilt material.
Do not breathe dust.
Avoid contact with skin and eyes.
Ensure adequate ventilation.
In case of inadequate ventilation wear respiratory protection.
Remove all sources of ignition.
Keep unnecessary and unprotected personnel from entering.

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 : Stop leak if safe to do so.
Move containers from spill area.
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Dispose of wastes in an approved waste disposal facility.

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 : For personal protection see section 8.
Avoid contact with skin and eyes.
Do not breathe dust.

Provide sufficient air exchange and/or exhaust in work rooms. In case of insufficient ventilation, wear suitable respiratory equipment.
Remove all sources of ignition.
Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use.
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Avoid dust formation.

Hygiene measures : General industrial hygiene practice. When using do not eat, drink or smoke. Wash hands and face before breaks and immediately after handling the product. Remove contaminated clothing and protective equipment before entering eating areas.

Dust explosion class : No data available

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep containers sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Use appropriate container to avoid environmental contamination. Electrical installations / working materials must comply with the technological safety standards. Keep away from heat and sources of ignition.

Advice on common storage : Do not store near acids.

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Occupational Exposure Limits

dust of any kind	10 mg/m3 Value type (Form of exposure): TWA (Inhalable) Basis: GB EH40

4 mg/m3
Value type (Form of exposure): TWA (Respirable fraction)
Basis: GB EH40

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/face protection	:	Tightly fitting safety goggles Face-shield
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	:	Complete suit protecting against chemicals Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory protection	:	In case of insufficient ventilation, wear suitable respiratory equipment.
Filter type	:	P2 filter
Protective measures	:	Ensure that eye flushing systems and safety showers are located close to the working place.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	powder
Physical state	:	solid
Colour	:	pink

Odour	:	citrus
Odour Threshold	:	No data available
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Flammability	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	Not applicable
Ignition temperature	:	No data available
Decomposition temperature	:	No data available
pH	:	1.5 - 2.75 Concentration: 1 %
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Solubility(ies)		
Water solubility	:	Soluble
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)
Bulk density	:	1.07 kg/m3
Relative vapour density	:	No data available

9.2 Other information

Explosives	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Flammability (liquids)	:	Not applicable
Flammable solids Burning number	:	No data available
Self-ignition	:	No data available
Metal corrosion rate	:	No data available
Dust explosion class	:	No data available
Evaporation rate	:	No data available
Miscibility with water	:	No data available
Surface tension	:	No data available
Molecular weight	:	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.

10.4 Conditions to avoid

Conditions to avoid	:	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5 Incompatible materials

Materials to avoid	:	Oxidizing agents Reducing agents

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : LD50 (Rat, female): > 2,000 mg/kg
Method: OECD Test Guideline 423
GLP: Yes
Assessment: The substance or mixture has no acute oral toxicity
Remarks: Dosage caused no mortality

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

Reaction product of Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs. and Benzenesulfonic acid, 4-methyl- and sodium hydroxide:

Acute oral toxicity : LD50 (Rat, male and female): 2,240 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
Remarks: Test results on an analogous product

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

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

(R)-p-mentha-1,8-diene:

Acute oral toxicity	:	LD50 (Rat): 4,400 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:

Species	:	reconstructed human epidermis (RhE)
Method	:	OECD Test Guideline 431
Result	:	Corrosive
GLP	:	Yes

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

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

Reaction product of Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs. and Benzenesulfonic acid, 4-methyl- and sodium hydroxide:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	Skin irritation
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.

dipotassium peroxodisulphate:

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

(R)-p-mentha-1,8-diene:

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

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.

Reaction product of Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs. and Benzenesulfonic acid, 4-methyl- and sodium hydroxide:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	Irreversible effects on the eye
GLP	:	No

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.

dipotassium peroxodisulphate:

Result	:	Irritating to eyes.

(R)-p-mentha-1,8-diene:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	No eye irritation

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.
GLP	:	Yes
Remarks	:	Test results on an analogous product

Exposure routes	:	Inhalation
Species	:	Human
Result	:	Does not cause respiratory sensitisation.
Remarks	:	Expert judgement Test results on an analogous product

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

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

Reaction product of Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs. and Benzenesulfonic acid, 4-methyl- and sodium hydroxide:

Test Type	:	Buehler Test
Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Did not cause sensitisation on laboratory animals.
GLP	:	Yes
Remarks	:	Test results on an analogous product

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.

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.

(R)-p-mentha-1,8-diene:

Exposure routes	:	Dermal
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	May cause sensitisation 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

Reaction product of Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs. and Benzenesulfonic acid, 4-methyl- and sodium hydroxide:

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

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male and female)
Cell type: Bone marrow
Application Route: Oral
Method: OECD Test Guideline 474
Result: negative
GLP: Yes
Remarks: Test results on an analogous product

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

dipotassium peroxodisulphate:

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

Carcinogenicity

Not classified based on available information.

Components:

Reaction product of Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs. and Benzenesulfonic acid, 4-methyl- and sodium hydroxide:

Species	:	Rat, male and female
Application Route	:	Dermal
Exposure time	:	2 Years
Method	:	OECD Test Guideline 453
Result	:	negative
GLP	:	Yes
Remarks	:	Test results on an analogous product

Species	:	Mouse, male and female
Application Route	:	Dermal
Exposure time	:	2 Years
Method	:	OECD Test Guideline 453
Result	:	negative
GLP	:	Yes
Remarks	:	Test results on an analogous product

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.

Reaction product of Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs. and Benzenesulfonic acid, 4-methyl- and sodium hydroxide:

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
Early Embryonic Development: NOAEL: 350 mg/kg body weight
Result: No effects on fertility and early embryonic development were detected.
GLP: No
Remarks: Test results on an analogous product

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat, female
Application Route: Oral
Dose: 0,2 - 2 - 300 - 600 milligram per kilogram
General Toxicity Maternal: NOAEL: 300 mg/kg body weight
Teratogenicity: NOAEL: 300 mg/kg body weight
Developmental Toxicity: NOAEL: 300 mg/kg body weight
Embryo-foetal toxicity: NOAEL: 600 mg/kg body weight
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

Reaction product of Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs. and Benzenesulfonic acid, 4-methyl- and sodium hydroxide:

Species	:	Rat, male and female
NOAEL	:	85 mg/kg
LOAEL	:	145 mg/kg
Application Route	:	Oral
Exposure time	:	270 d
Dose	:	85-145-430 mg/kg bw/d
Remarks	:	Chronic toxicity Test results on an analogous product

Species	:	Mouse, male and female
NOAEL	:	440 mg/kg
LOAEL	:	1,300 mg/kg
Application Route	:	Skin contact
Exposure time	:	90 d
Dose	:	17-50-140-440-1300 mg/kg bw/d
Method	:	OECD Test Guideline 411
GLP	:	Yes
Remarks	:	Subchronic toxicity Test results on an analogous product

malic acid:

Remarks	:	No known significant effects or critical hazards.

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 (Oncorhynchus mykiss (rainbow trout)): > 7.66 mg/l Exposure time: 96 h Test Type: semi-static test Analytical monitoring: No Method: OECD Test Guideline 203 GLP: Yes Remarks: nominal concentration
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 17.74 mg/l End point: Immobilization Exposure time: 48 h Test Type: static test Analytical monitoring: No Method: OECD Test Guideline 202 GLP: Yes Remarks: nominal concentration
Toxicity to algae/aquatic plants	:	EC10 (Pseudokirchneriella subcapitata (green algae)): 5.84 mg/l End point: Growth rate Exposure time: 72 h Test Type: static test Analytical monitoring: No Method: OECD Test Guideline 201 GLP: Yes Remarks: nominal concentration

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	:	EC50 (Daphnia magna (Water flea)): 3.5 mg/l

aquatic invertebrates

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

Reaction product of Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs. and Benzenesulfonic acid, 4-methyl- and sodium hydroxide:

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 5.5 mg/l
Exposure time: 96 h
Analytical monitoring: Yes
Method: OECD Test Guideline 203
GLP: Yes
Remarks: Fresh water

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 8.8 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 (Desmodesmus subspicatus (green algae)): 72 mg/l
End point: Growth rate
Exposure time: 72 h
Analytical monitoring: Yes
Method: OECD Test Guideline 201
GLP: Yes
Remarks: Fresh water

EC10 (Desmodesmus subspicatus (green algae)): 8.4 mg/l
End point: Growth rate
Exposure time: 72 h
Analytical monitoring: Yes
Method: OECD Test Guideline 201
GLP: Yes
Remarks: Fresh water

Toxicity to microorganisms : EC10 (Pseudomonas putida): 56 mg/l

End point: Growth rate
Exposure time: 16 h
Analytical monitoring: No
Method: DIN 38 412 Part 8
GLP: Yes

Toxicity to fish (Chronic toxicity) : NOEC: > 0.1 - 1 mg/l
Exposure time: 72 d
Species: Oncorhynchus mykiss (rainbow trout)
Analytical monitoring: Yes
GLP: Yes
Remarks: Fresh water
Test results on an analogous product

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: > 0.1 - 1 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Analytical monitoring: Yes
Method: OECD Test Guideline 211
GLP: Yes
Remarks: Fresh water
Test results on an analogous product

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 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 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

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.

(R)-p-mentha-1,8-diene:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 0.72 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Fresh water

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.307 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Fresh water

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 0.32 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Fresh water

EC10 (Pseudokirchneriella subcapitata (green algae)): 0.174 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Fresh water

M-Factor (Acute aquatic toxicity) : 1

Toxicity to fish (Chronic toxicity) : NOEC: 0.059 mg/l
Exposure time: 8 d
Species: Pimephales promelas (fathead minnow)
Method: OECD Test Guideline 212
Remarks: Fresh water

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.08 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211
Remarks: Fresh water

12.2 Persistence and degradability

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

Biodegradability : Result: The methods for determining the biological degradabil-

ity are not applicable to inorganic substances.

Reaction product of Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs. and Benzenesulfonic acid, 4-methyl- and sodium hydroxide:

Biodegradability : Result: rapidly biodegradable
Biodegradation: 94 %
Exposure time: 28 d
Method: Regulation (EC) No. 440/2008, Annex, C.4-A

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.

dipotassium peroxodisulphate:

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

(R)-p-mentha-1,8-diene:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 80 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

12.3 Bioaccumulative potential

Components:

pentapotassium bis(peroxymonosulphate) bis(sulphate):

Partition coefficient: n-octanol/water : log Pow: < 0.3
Method: OECD Test Guideline 117

Reaction product of Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs. and Benzenesulfonic acid, 4-methyl- and sodium hydroxide:

Bioaccumulation : Remarks: Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

Partition coefficient: n-octanol/water : log Pow: 0.7 (20 °C)
pH: 6
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

(R)-p-mentha-1,8-diene:

Partition coefficient: n-octanol/water : log Pow: 4.38
Method: OECD Test Guideline 117

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:

Endocrine disrupting potential : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : The generation of waste should be avoided or minimised wherever possible.
Where possible recycling is preferred to disposal or incineration.
Wastedisposal should be in accordance with existing federal state, provincial and or local environmental controls

Dispose of as hazardous waste in compliance with local and national regulations.
Do not contaminate ponds, waterways or ditches with chemical or used container.
The product should not be allowed to enter drains, water courses or the soil.
Dispose of wastes in an approved waste disposal facility.

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

SECTION 14: Transport information

14.1 UN number

ADN : UN 1759

ADR : UN 1759

RID : UN 1759

IMDG : UN 1759

IATA : UN 1759

14.2 UN proper shipping name

ADN : CORROSIVE SOLID, N.O.S. (MONOPERSULFATE COMPOUND)

ADR : CORROSIVE SOLID, N.O.S. (MONOPERSULFATE COMPOUND)

RID : CORROSIVE SOLID, N.O.S. (MONOPERSULFATE COMPOUND)

IMDG : CORROSIVE SOLID, N.O.S. (MONOPERSULFATE COMPOUND)

IATA : Corrosive solid, n.o.s. (MONOPERSULFATE COMPOUND)

14.3 Transport hazard class(es)

ADN : 8

ADR : 8

RID : 8

IMDG : 8

IATA : 8

14.4 Packing group

ADN

Packing group : II
Classification Code : C10
Hazard Identification Number : 80
Labels : 8
:

ADR
Packing group : II
Classification Code : C10
Hazard Identification Number : 80
Labels : 8
:

Tunnel restriction code : (E)

RID
Packing group : II
Classification Code : C10
Hazard Identification Number : 80
Labels : 8
:

IMDG
Packing group : II
Labels : 8
:

EmS Code : F-A, S-B

IATA (Cargo)
Packing instruction (cargo aircraft) : 863 : 50.00 KG
Packing group : II
Labels : 8
:

IATA (Passenger)

Packing instruction (passenger aircraft)	:	859 : 15.00 KG
Packing group	:	II
Labels	:	8
	:	

14.5 Environmental hazards

ADN
Environmentally hazardous : no

ADR
Environmentally hazardous : no

RID
Environmentally hazardous : no

IMDG
Marine pollutant : no

14.6 Special precautions for user

Hazard and Handling Notes. : Corrosive.
Keep away from acids and oxidizing agents.
Keep separated from foodstuffs.

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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

UK REACH List of restrictions (Annex 17)	:	Not applicable
UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation	:	Not applicable
The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain)	:	Not applicable
International Chemical Weapons Convention (CWC) Schedules of Toxic Chemicals and Precursors	:	Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	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

Control of Major Accident Hazards Regulations 2015 (COMAH)
Not applicable

Other regulations:

Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to new and expectant mothers at work contained in Regulation 16 to 18) and of the Pregnant Workers Directive 92/85/EEC.

Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to protection of young people at work contained in Regulation 19) and of Directive 94/33/EC on the protection of young people at work.

15.2 Chemical safety assessment

Not applicable

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
Asp. Tox.	:	Aspiration 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
GB EH40	:	UK. EH40 WEL - Workplace Exposure Limits
GB EH40 / TWA	:	Long-term exposure limit (8-hour TWA reference period)

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

Further information

BIOVX

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Classification of the mixture:		**Classification procedure:**
Skin Corr. 1	H314	Based on product data or assessment
Eye Dam. 1	H318	Based on product data or assessment
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.

Relevant changes from the previous version are marked on the left side of the Safety Data Sheet with a black double bar in appropriate places.