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

1.1 Product identifier

Trade name : bactipal® 2,5

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

Use of the Sub-stance/Mixture : Disinfectants and general biocidal products

Recommended restrictions on use : Restricted to professional users.

1.3 Details of the supplier of the safety data sheet

Producer :
BIOXAL
ZI Sud Secteur A
Route des Varennes

71100 Chalon-sur-Saône
France
Telephone: + 33 (0) 3 85 92 30 00
Telefax: + 33 (0) 3 85 92 30 12

Supplier :
Schülke France SARL
ZI Sud secteur A
Route des Varennes

71100 Chalon sur Saône
France
Telephone: + 33 (0) 3 85 92 30 00
schuelkefrance.info@schuelke.com

E-mail address of person responsible for the SDS/Contact person : schuelkefrance.info@schuelke.com
+ 33 (0) 3 85 92 30 00

1.4 Emergency telephone number

Emergency telephone number : Carechem 24 International: +44 1235 239670

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)

Oxidizing liquids, Category 2	H272: May intensify fire; oxidizer.
Corrosive to metals, Category 1	H290: May be corrosive to metals.
Acute toxicity, Category 4	H302: Harmful if swallowed.
Acute toxicity, Category 4	H332: Harmful if inhaled.
Skin corrosion, Sub-category 1B	H314: Causes severe skin burns and eye damage.

Serious eye damage, Category 1	H318: Causes serious eye damage.
Specific target organ toxicity - single exposure, Category 3, Respiratory system	H335: May cause respiratory irritation.
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic 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 :
H272 May intensify fire; oxidizer.
H290 May be corrosive to metals.
H302 + H332 Harmful if swallowed or if inhaled.
H314 Causes severe skin burns and eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements : EUH071 Corrosive to the respiratory tract.

Precautionary statements :

Prevention:

P220 Keep away from clothing and other combustible materials.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P310 Immediately call a POISON CENTER/ doctor.
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 or shower.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.

Disposal:

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

Hazardous components which must be listed on the label:
hydrogen peroxide

nitric acid
acetic acid
peracetic acid

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

Chemical nature : Solution of the following substances

Hazardous components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
hydrogen peroxide	7722-84-1 231-765-0 008-003-00-9 01-2119485845-22-XXXX	Ox. Liq. 1; H271 Acute Tox. 4; H302 Acute Tox. 4; H332 Skin Corr. 1A; H314 Eye Dam. 1; H318 STOT SE 3; H335 (Respiratory system) Aquatic Chronic 3; H412 ——————— specific concentration limit Ox. Liq. 1; H271 >= 70 % Ox. Liq. 2; H272 50 - < 70 % Skin Corr. 1A; H314 >= 70 % Skin Corr. 1B; H314 50 - < 70 % Skin Irrit. 2; H315 35 - < 50 % Eye Dam. 1; H318 8 - < 50 % Eye Irrit. 2; H319 5 - < 8 % STOT SE 3; H335 >= 35 %	>= 10 - < 20
nitric acid	7697-37-2	Ox. Liq. 3; H272	>= 5 - < 10

		231-714-2 007-030-00-3 01-2119487297-23-XXXX	Met. Corr. 1; H290 Acute Tox. 3; H331 Skin Corr. 1A; H314 Eye Dam. 1; H318 ——————— specific concentration limit Ox. Liq. 3; H272 >= 65 % Skin Corr. 1A; H314 >= 20 % Skin Corr. 1B; H314 5 - < 20 % Eye Dam. 1; H318 >= 3 % Eye Irrit. 2; H319 1 - < 3 % Skin Irrit. 2; H315 1 - < 5 %	
	acetic acid	64-19-7 200-580-7 607-002-00-6 01-2119475328-30-XXXX	Flam. Liq. 3; H226 Skin Corr. 1A; H314 Eye Dam. 1; H318 ——————— specific concentration limit Skin Corr. 1A; H314 >= 90 % Skin Corr. 1B; H314 25 - < 90 % Skin Irrit. 2; H315 10 - < 25 % Eye Irrit. 2; H319 10 - < 25 %	>= 3 - < 5
	peracetic acid	79-21-0 201-186-8 607-094-00-8 01-2119531330-56-XXXX	Flam. Liq. 3; H226 Org. Perox. D; H242 Acute Tox. 3; H301 Acute Tox. 3; H331 Acute Tox. 3; H311 Skin Corr. 1A; H314 Eye Dam. 1; H318 STOT SE 3; H335 (Respiratory system) Aquatic Acute 1; H400	>= 2.5 - < 3

		Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 10 _____ specific concentration limit STOT SE 3; H335 >= 1 %	

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice	:	Take off all contaminated clothing immediately. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
If inhaled	:	Move the victim to fresh air and keep him calm. If symptoms persist, call a physician.
In case of skin contact	:	Wash off immediately with plenty of water. Call a physician immediately.
In case of eye contact	:	In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.
If swallowed	:	Do NOT induce vomiting. Rinse mouth with water. Give small amounts of water to drink. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	corrosive effects
Risks	:	Harmful if swallowed or if inhaled. Causes severe skin burns and eye damage. Corrosive to the respiratory tract.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	For specialist advice physicians should contact the Poisons Information Service.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Water spray jet Foam Dry powder
Unsuitable extinguishing media	:	Carbon dioxide (CO2) Do NOT use water jet.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting	:	Cool closed containers exposed to fire with water spray.
Hazardous combustion products	:	No hazardous combustion products are known

5.3 Advice for firefighters

Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapour. Remove all sources of ignition.

6.2 Environmental precautions

Environmental precautions	:	Avoid subsoil penetration. Do not flush into surface water or sanitary sewer system.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Soak up with inert absorbent material. Unsuitable material for picking up: Absorbent material, organic Kieselguhr Sawdust Keep in suitable, closed containers for disposal. Clean contaminated surface thoroughly. Flush with water.

6.4 Reference to other sections

see Section 8 + 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	Provide sufficient air exchange and/or exhaust in work rooms. Handle and open container with care. Never return unused material to storage receptacle.
Advice on protection against fire and explosion	:	Keep away from sources of ignition - No smoking. Keep away from combustible material. May cause or intensify fire; oxidizer.
Hygiene measures	:	When using do not eat or drink. Take off all contaminated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Keep only in the original container. Suitable container and packaging materials for safe storage Plastic container of HDPE Polyethylene glass Unsuitable materials for containers Metals Store in a receptacle equipped with a vent. Keep in a bunded area.
Further information on storage conditions	:	Keep away from heat. Keep away from direct sunlight. Store in cool place. Do not keep the container sealed. Store in upright position only. Recommended storage temperature: 5 - 30°C
Advice on common storage	:	Do not store together with metals. Do not store together with alkalis. Do not store together with reducing agents. Do not store together with combustible substances.

7.3 Specific end use(s)

Specific use(s)	:	none

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
hydrogen peroxide	7722-84-1	TWA	1 ppm 1.4 mg/m3	GB EH40
		STEL	2 ppm 2.8 mg/m3	GB EH40
		PEL	1.25 mg/m3	Biocide dossier
		STEL	1.25 mg/m3	Biocide dossier
nitric acid	7697-37-2	STEL	1 ppm 2.6 mg/m3	GB EH40
		STEL	1 ppm	2006/15/EC

			2.6 mg/m3	
	Further information: Indicative			
acetic acid	64-19-7	STEL	20 ppm 50 mg/m3	GB EH40
		TWA	10 ppm 25 mg/m3	GB EH40
		TWA	10 ppm 25 mg/m3	2017/164/EU
	Further information: Indicative			
		STEL	20 ppm 50 mg/m3	2017/164/EU
	Further information: Indicative			
peracetic acid	79-21-0	PEL	0.16 ppm 0.5 mg/m3	Biocide dossier
		STEL	0.16 ppm 0.5 mg/m3	Biocide dossier

Derived No Effect Level (DNEL):

Substance name	End Use	Exposure routes	Potential health effects	Value
hydrogen peroxide	Workers	Inhalation	Long-term local effects	1.4 mg/m3
acetic acid	Workers	Inhalation	Acute local effects	25 mg/m3
	Workers	Inhalation	Long-term local effects	25 mg/m3
nitric acid	Workers	Inhalation	Long-term local effects	2.6 mg/m3
	Workers	Inhalation	Acute local effects	2.6 mg/m3

Predicted No Effect Concentration (PNEC):

Substance name	Environmental Compartment	Value
hydrogen peroxide	Fresh water	0.0126 mg/l
	Marine water	0.0126 mg/l
	Intermittent use/release	0.0138 mg/l
	Effects on waste water treatment plants	4.66 mg/l
	Fresh water sediment	0.047 mg/kg
	Marine sediment	0.047 mg/kg
	Soil	0.0023 mg/kg
acetic acid	Fresh water	3.058 mg/l
	Marine water	0.306 mg/l
	Fresh water sediment	11.36 mg/kg
	Marine sediment	1.136 mg/kg
	Intermittent use/release	30.58 mg/l
	Soil	0.478 mg/kg
	Effects on waste water treatment plants	85 mg/l
peracetic acid	Fresh water	0.0069 µg/l
	Marine water	0.069 µg/l
	Effects on waste water treatment plants	0.051 mg/l
	Effects on terrestrial organisms	0.282 mg/kg

8.2 Exposure controls

Engineering measures

Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye/face protection	:	Safety glasses with side-shields conforming to EN166 Face-shield
Hand protection		
Directive	:	The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.
Remarks	:	Prolonged contact: Nitrile rubber gloves e.g. Camatril (>120 Min., layer thickness: 0.40 mm) or butyl rubber gloves e.g. Butoject (>480 Min., layer thickness: 0.70 mm) made by KCL or gloves from other manufacturers offering the same protection. Splash protection: disposable nitrile rubber gloves e.g. Dermatril (layer thickness: 0.11 mm) made by KCL or gloves from other manufacturers offering the same protection.
Skin and body protection	:	Choose body protection according to the amount and concentration of the dangerous substance at the work place. Wear as appropriate: Chemical resistant apron Boots Neoprene
Respiratory protection	:	If the occupational exposure limits cannot be met, in exceptional cases suitable respiratory equipment should be worn only for a short period of time. Combination filter: A2B2E2K2 Hg NO P3 R D/ CO 20 P3 R D
Protective measures	:	Do not breathe vapour. Avoid contact with skin and eyes.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Colour	:	colourless
Odour	:	vinegar-like
Odour Threshold	:	not determined
pH	:	1.9 (20 °C) Concentration: 10 g/l in water
Melting point/freezing point	:	< -25 °C
Decomposition temperature		No data available
Boiling point/boiling range	:	ca. 104 °C
Flash point	:	> 105 °C
Evaporation rate	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available

Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	21 hPa (ca. 20 °C)
		100 hPa (ca. 50 °C)
Relative vapour density	:	No data available
Density	:	1.13 g/cm3 (20 °C)
Solubility(ies)		
Water solubility	:	completely soluble
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	> 435 °C
Viscosity		
Viscosity, dynamic	:	1.26 mPa*s (20 °C)
Viscosity, kinematic	:	not determined
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is classified as oxidizing with the category 2.

9.2 Other information

Flammability (liquids)	:	The product itself does not burn, but it is oxidising.
Metal corrosion rate	:	Corrosive to metals Aluminium and Mild steel

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

Self-Accelerating decomposition temperature (SADT): >60°C

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Keep away from combustible material. To avoid thermal decomposition, do not overheat.

10.4 Conditions to avoid

Conditions to avoid	:	Extremes of temperature and direct sunlight.

10.5 Incompatible materials

Materials to avoid	:	Strong acids and strong bases Reducing agents Acid chlorides

Aldehydes
Metals

10.6 Hazardous decomposition products

Oxygen

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Harmful if swallowed or if inhaled.

Product:

Acute oral toxicity	:	Acute toxicity estimate: 1,997 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: 11 mg/l Exposure time: 4 h Test atmosphere: vapour Method: Expert judgement and weight of evidence determination.
Acute dermal toxicity	:	Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method

Components:

hydrogen peroxide:

Acute oral toxicity	:	LD50 (Rat): 801 mg/kg Remarks: Harmful if swallowed.
Acute inhalation toxicity	:	Assessment: The component/mixture is moderately toxic after short term inhalation. Remarks: Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, Annex VI, Table 3.1
Acute dermal toxicity	:	LD50 (Rat): 6,500 mg/kg

nitric acid:

Acute oral toxicity	:	Remarks: No data available
Acute inhalation toxicity	:	LC50 (Rat): 2.65 mg/l Exposure time: 4 h Test atmosphere: vapour Method: OECD Test Guideline 403
Acute dermal toxicity	:	Remarks: This information is not available.

acetic acid:

Acute oral toxicity	:	LD50 (Rat): 3,310 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 39.8 mg/l Exposure time: 4 h Test atmosphere: vapour
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg

peracetic acid:

Acute oral toxicity	:	LD50: 300 - 2,000 mg/kg Assessment: Harmful if swallowed.
Acute inhalation toxicity	:	LC50: 1 - 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: Harmful if inhaled.
Acute dermal toxicity	:	LD50: 1,000 - 2,000 mg/kg Assessment: Harmful if inhaled.

Skin corrosion/irritation

Causes severe burns.

Components:

hydrogen peroxide:

Species	:	Rabbit
Result	:	Corrosive after 3 minutes or less of exposure

nitric acid:

Species	:	Rabbit
Result	:	Corrosive after 3 minutes or less of exposure

acetic acid:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	Corrosive after 3 minutes or less of exposure

peracetic acid:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	Corrosive after 3 minutes or less of exposure

Serious eye damage/eye irritation

Causes serious eye damage.

Components:

hydrogen peroxide:

Species	:	Rabbit
Result	:	Irreversible effects on the eye

nitric acid:

Result	:	Irreversible effects on the eye

acetic acid:

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

peracetic acid:

Species	:	Rabbit
Result	:	Irreversible effects on the eye

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

hydrogen peroxide:

Species	:	Guinea pig
Result	:	Did not cause sensitisation on laboratory animals.

nitric acid:

Remarks	:	This information is not available.

acetic acid:

Result	:	No data available

peracetic acid:

Species	:	Mouse
Result	:	Did not cause sensitisation on laboratory animals.
Remarks	:	Substance is not considered to be potential skin sensitiser.

Germ cell mutagenicity

Not classified based on available information.

Components:

hydrogen peroxide:

Genotoxicity in vitro	:	Test Type: Ames test Result: negative
Genotoxicity in vivo	:	Test Type: in vivo assay Result: Non mutagenic

nitric acid:

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

acetic acid:

Genotoxicity in vitro	:	Test Type: Ames test Result: negative

peracetic acid:

Germ cell mutagenicity- Assessment	:	Germ cell effects are not relevant., The substance has been tested for mutagenicity and other types of genotoxic effects in in vitro and in vivo experiments and is evaluated as being non-mutagenic.

Carcinogenicity

Not classified based on available information.

Components:

hydrogen peroxide:

Carcinogenicity - Assessment	:	Animal testing did not show any carcinogenic effects.

nitric acid:

Carcinogenicity - Assessment	:	Carcinogenicity classification not possible from current data.

acetic acid:

Carcinogenicity - Assessment	:	Animal testing did not show any carcinogenic effects.

peracetic acid:

Carcinogenicity - Assessment	:	No structural alerts for carcinogenicity were found.

Reproductive toxicity

Not classified based on available information.

Components:

hydrogen peroxide:

Reproductive toxicity - Assessment	:	Animal testing did not show any effects on fertility.

nitric acid:

Effects on fertility	:	Species: Rat Application Route: Oral General Toxicity - Parent: NOAEL: >= 1,500 mg/kg bw/day Remarks: Animal testing did not show any effects on fertility.

acetic acid:

Reproductive toxicity - Assessment	:	Animal testing did not show any effects on fertility.

peracetic acid:

Effects on foetal development	:	Species: Rat Application Route: Oral General Toxicity Maternal: NOAEL: 100 mg/l Teratogenicity: NOAEL F1: 100 mg/l
Reproductive toxicity - Assessment	:	Animal testing did not show any effects on fertility.

STOT - single exposure

Corrosive to the respiratory tract.

Components:

hydrogen peroxide:

Target Organs	:	Respiratory Tract
Assessment	:	May cause respiratory irritation.

nitric acid:

Remarks	:	No data available

acetic acid:

Assessment	:	The substance or mixture is not classified as specific target organ toxicant, single exposure.

peracetic acid:

Assessment	:	May cause respiratory irritation.

STOT - repeated exposure

Not classified based on available information.

Components:

hydrogen peroxide:

Assessment	:	No data available

nitric acid:

Remarks	:	No data available

acetic acid:

Assessment	:	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

peracetic acid:

Assessment	:	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Components:

hydrogen peroxide:

Species	:	Rat
NOAEL	:	26 mg/kg
Application Route	:	Oral
Exposure time	:	3 months
Remarks	:	No adverse effect has been observed in chronic toxicity tests.

Species	:	Rat
NOAEL	:	0.0029 mg/l
Application Route	:	inhalation (vapour)
Method	:	OECD Test Guideline 407

nitric acid:

Species	:	Rat
NOAEL	:	1,500 mg/kg
Application Route	:	Oral
Exposure time	:	28-day
Method	:	OECD Test Guideline 422

acetic acid:

Species	:	Rat
NOAEL	:	1,800 mg/kg
Application Route	:	Oral
Exposure time	:	14-days

peracetic acid:

Species	:	Rat
NOAEL	:	15 mg/kg
Exposure time	:	90-day
Remarks	:	No adverse effect has been observed in sub chronic toxicity tests.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks	:	No data is available on the product itself. Description of possible hazardous to health effects is based on experience and/or toxicological characteristics of several components. If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

SECTION 12: Ecological information

12.1 Toxicity

Components:

hydrogen peroxide:

Toxicity to fish	:	LC50 (Fish): 16.4 - 37.4 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia pulex (Water flea)): 2.4 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Skeletonema costatum (marine diatom)): 1.38 mg/l Exposure time: 72 h NOEC (Skeletonema costatum (marine diatom)): 0.63 mg/l Exposure time: 72 h
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0.63 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)

nitric acid:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 12.5 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Ceriodaphnia dubia (water flea)): 4.6 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	Remarks: No data available

Ecotoxicology Assessment

Chronic aquatic toxicity	:	This product has no known ecotoxicological effects.

acetic acid:

Toxicity to fish	:	LC50 (Gambusia affinis (Mosquito fish)): 251 mg/l Exposure time: 96 h Test Type: static test
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna): 95 mg/l Exposure time: 24 h
Toxicity to algae/aquatic plants	:	EC100 (Euglena gracilis): 720 mg/l Exposure time: 0.25 h

peracetic acid:

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 1.1 mg/l Exposure time: 96 h Test Type: semi-static test

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna): 0.73 mg/l Exposure time: 48 h Test Type: static test
Toxicity to algae/aquatic plants	:	NOEC (Pseudokirchneriella subcapitata (green algae)): 0.061 mg/l Exposure time: 72 h Test Type: static test
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to fish (Chronic toxicity)	:	NOEC: 0.00069 mg/l Exposure time: 33 d Species: Danio rerio (zebra fish)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0.0121 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
M-Factor (Chronic aquatic toxicity)	:	10

12.2 Persistence and degradability

Components:

hydrogen peroxide:

Biodegradability	:	Result: Totally biodegradable Method: OECD Test Guideline 301

nitric acid:

Biodegradability	:	Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

acetic acid:

Biodegradability	:	Result: Totally biodegradable Method: OECD 301D / EEC 84/449 C6

peracetic acid:

Biodegradability	:	Result: Readily biodegradable. Method: OECD Test Guideline 301

12.3 Bioaccumulative potential

Components:

hydrogen peroxide:

Bioaccumulation	:	Remarks: Does not bioaccumulate.
Partition coefficient: n-octanol/water	:	log Pow: -1.57

nitric acid:

Bioaccumulation	:	Remarks: No data available

acetic acid:

Bioaccumulation	:	Remarks: Bioaccumulation is unlikely.

peracetic acid:

Bioaccumulation	:	Remarks: Does not bioaccumulate.
Partition coefficient: n-octanol/water	:	log Pow: -0.26 (20 °C) Method: Calculated value

12.4 Mobility in soil

Components:

hydrogen peroxide:

Mobility	:	Medium: Water Remarks: Hydrolyses readily.

nitric acid:

Mobility	:	Medium: Soil Remarks: Hydrolyses readily.

acetic acid:

Mobility	:	Remarks: No data available

peracetic acid:

Mobility	:	Medium: Water Remarks: Hydrolyses readily.

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	:	No data is available on the product itself.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	Disposal together with normal waste is not allowed. Special disposal required according to local regulations.
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number

ADR	:	UN 3149
IMDG	:	UN 3149
IATA	:	UN 3149

14.2 UN proper shipping name

ADR	:	HYDROGEN PEROXIDE AND PEROXYACETIC ACID MIXTURE, STABILIZED
IMDG	:	HYDROGEN PEROXIDE AND PEROXYACETIC ACID MIXTURE, STABILIZED
IATA	:	Hydrogen peroxide and peroxyacetic acid mixture stabilized

14.3 Transport hazard class(es)

		Class	Subsidiary risks
ADR	:	5.1	8
IMDG	:	5.1	8
IATA	:	5.1	8

14.4 Packing group

ADR

Packing group	:	II
Classification Code	:	OC1
Hazard Identification Number	:	58
Labels	:	5.1 (8)
Tunnel restriction code	:	(E)

IMDG

Packing group	:	II
Labels	:	5.1 (8)
EmS Code	:	F-H, S-Q

IATA (Cargo)

Packing instruction (cargo aircraft)	:	554
Packing instruction (LQ)	:	Y540

Packing group	:	II
Labels	:	Oxidizer, Corrosive

IATA (Passenger)

Packing instruction (passenger aircraft)	:	550
Packing instruction (LQ)	:	Y540
Packing group	:	II
Labels	:	Oxidizer, Corrosive

14.5 Environmental hazards

ADR

Environmentally hazardous	:	yes

IMDG

Marine pollutant	:	yes

14.6 Special precautions for user

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)	:	Conditions of restriction for the following entries should be considered: Number on list 3
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
Regulation (EC) on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1148 on the marketing and use of explosives precursors	:	hydrogen peroxide nitric acid
UK REACH List of substances subject to authorisation (Annex XIV)	:	Not applicable
Volatile organic compounds	:	Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control) Volatile organic compounds (VOC) content: 7.41 %

Other regulations:

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.

The components of this product are reported in the following inventories:

TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	All substances listed as active on the TSCA inventory
AIIC	:	On the inventory, or in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
ENCS	:	On the inventory, or in compliance with the inventory
ISHL	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
TECI	:	Not in compliance with the inventory

15.2 Chemical safety assessment

SECTION 16: Other information

Full text of H-Statements

H226	:	Flammable liquid and vapour.
H242	:	Heating may cause a fire.
H271	:	May cause fire or explosion; strong oxidizer.
H272	:	May intensify fire; oxidizer.
H290	:	May be corrosive to metals.
H301	:	Toxic if swallowed.
H302	:	Harmful if swallowed.
H311	:	Toxic in contact with skin.
H314	:	Causes severe skin burns and eye damage.
H318	:	Causes serious eye damage.
H331	:	Toxic if inhaled.
H332	:	Harmful 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

Flam. Liq.	:	Flammable liquids
Met. Corr.	:	Corrosive to metals
Org. Perox.	:	Organic peroxides
Ox. Liq.	:	Oxidizing liquids
Skin Corr.	:	Skin corrosion
STOT SE	:	Specific target organ toxicity - single exposure
2006/15/EC	:	Europe. Indicative occupational exposure limit values
2017/164/EU	:	Europe. Commission Directive 2017/164/EU establishing a fourth list of indicative occupational exposure limit values
GB EH40	:	UK. EH40 WEL - Workplace Exposure Limits
2006/15/EC / STEL	:	Short term exposure limit
2017/164/EU / STEL	:	Short term exposure limit
2017/164/EU / TWA	:	Limit Value - eight hours
GB EH40 / TWA	:	Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL	:	Short-term exposure limit (15-minute 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

Classification of the mixture:		**Classification procedure:**
Ox. Liq. 2	H272	Based on product data or assessment
Met. Corr. 1	H290	Based on product data or assessment

Acute Tox. 4	H302	Calculation method
Acute Tox. 4	H332	Expert judgement and weight of evidence determination.
Skin Corr. 1B	H314	Calculation method
Eye Dam. 1	H318	Calculation method
STOT SE 3	H335	Calculation method
Aquatic Chronic 1	H410	Calculation method

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. 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 a 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.