Conforms to EU Regulation 1907/2006/EC as amended.

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

1.1 Product identifier

Trade name : CLEAR 4 WEEKS ALL IN ONE

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

Use of the Substance/Mixture : Swimming Pool Sanitizer

1.3 Details of the supplier of the safety data sheet	1.4 Emergency telephone number
Innovative Water Care Europe Z.I. LA BOITARDIERE BP 219 37402 Amboise Cedex France **E-mail address of person responsible for the SDS:** EHSProductSafetyTeam@solenis.com **Product Information** Innovative Water Care Europe: +33 (0)2 47 23 43 00, Innovative Water Care Ltd: +44 (0) 1924 792909	Europe: NCEC +44 (0)1235 239 670, Africa, and Middle East: NCEC +44 (0)1235 239 671 , or contact your local emergency telephone number at 112

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Oxidizing solids, 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.
Skin corrosion, Sub-category 1B	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.

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)

Hazard pictograms :

Signal word : Danger

Hazard statements :
H272 May intensify fire; oxidizer.
H290 May be corrosive to metals.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements :
EUH031 Contact with acids liberates toxic gas.
EUH071 Corrosive to the respiratory tract.

Precautionary statements :

Prevention:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220 Keep away from clothing and other combustible materials.
P260 Do not breathe dust.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

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.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391 Collect spillage.

Hazardous components which must be listed on the label:

calcium hypochlorite
zinc sulphate (anhydrous)
ALUMINUM SULFATE

copper sulphate

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.

Ecological information: 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.

Toxicological information: 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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)
calcium hypochlorite	7778-54-3 231-908-7	Ox. Sol. 2; H272 Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318 Aquatic Acute 1; H400 EUH031, EUH071 M-Factor (Acute aquatic toxicity): 10 specific concentration limit Skin Corr. 1B; H314 >= 5 % Skin Irrit. 2; H315 1 - < 5 % Eye Dam. 1; H318 3 - < 5 % Eye Irrit. 2; H319 0,5 - < 3 %	>= 40 - < 50
zinc sulphate (anhydrous)	7733-02-0 231-793-3 01-2119474684-27-xxxx	Acute Tox. 4; H302 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 15 - < 25
ALUMINUM SULFATE	10043-01-3 233-135-0 01-2119531538-36-xxxx	Met. Corr. 1; H290 Eye Dam. 1; H318	>= 10 - < 15
copper sulphate	7758-98-7	Acute Tox. 4; H302	>= 5 - < 10

	231-847-6	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 10	
CALCIUM HYDROXIDE	1305-62-0 215-137-3 01-2119475151-45-xxxx	Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT SE 3; H335	>= 3 - < 5
calcium chloride	10043-52-4 233-140-8 01-2119494219-28-xxxx	Eye Irrit. 2; H319	>= 2,5 - < 5
Substances with a workplace exposure limit :			
CALCIUM CARBONATE	471-34-1 207-439-9		>= 1 - < 2,5

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.

If inhaled : Move to fresh air.
If breathed in, move person into fresh air.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : If on skin, rinse well with water.
Wash contaminated clothing before re-use.
If on clothes, remove clothes.

In case of eye contact : 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.

If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Cough
discomfort in the chest
bronchitis
Headache
Shortness of breath
hole formation in the nasal septum
lung edema (fluid buildup in the lung tissue)
Convulsions

Risks : Pulmonary edema may be delayed.

Harmful if swallowed.
Causes serious eye damage.
Corrosive to the respiratory tract.
Causes severe burns.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No hazards which require special first aid measures.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : In solution form, this material will react with zinc (galvanizing) to yield hydrogen gas which is explosive.
Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.
Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion : Chlorine

products	halogenated hydrocarbons hydrogen chloride zinc oxide Sulphur oxides Sodium oxides aluminum oxides Copper oxides sulfur compounds calcium oxide chloride fumes Carbon monoxide Carbon dioxide (CO2)

5.3 Advice for firefighters

Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.
Specific extinguishing methods	:	Product is compatible with standard fire-fighting agents.
Further information	:	Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Use a water spray to cool fully closed containers.

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. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Comply with all applicable federal, state, and local regulations.

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	:	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For further information see Section 8 and Section 13 of the safety data sheet.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid dust formation.
Do not breathe vapours/dust.
Do not smoke.
Container hazardous when empty.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Avoid dust formation. Take measures to prevent the build up of electrostatic charge. Keep away from combustible material. Provide appropriate exhaust ventilation at places where dust is formed.

Hygiene measures : Avoid breathing dust. Wash hands before breaks and at the end of workday. When using do not eat or drink. Ensure that eyewash stations and safety showers are close to the workstation location. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : 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. Observe label precautions. No smoking. Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability : 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

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
ALUMINUM SULFATE	10043-01-3	TWA	2 mg/m3 (Aluminium)	GB EH40
	Further information: Where no specific short-term exposure limit is listed, a			

	figure three times the long-term exposure limit should be used.			
copper sulphate	7758-98-7	TWA (Dusts and mists)	1 mg/m3 (Copper)	GB EH40
		STEL (Dusts and mists)	2 mg/m3 (Copper)	GB EH40
CALCIUM HYDROXIDE	1305-62-0	TWA	5 mg/m3	GB EH40
		TWA (Respirable fraction)	1 mg/m3	GB EH40
		STEL (Respirable fraction)	4 mg/m3	GB EH40
		TWA (Respirable fraction)	1 mg/m3	2017/164/EU
	Further information: Indicative			
		STEL (Respirable fraction)	4 mg/m3	2017/164/EU
	Further information: Indicative			
CALCIUM CARBONATE	471-34-1	TWA (inhalable dust)	10 mg/m3	GB EH40
	Further information: For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/4 General methods for sampling and gravimetric analysis or respirable, thoracic and inhalable aerosols., The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m-3 8-hour TWA of inhalable dust or 4 mg.m-3 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed to dust above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limits., Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system, and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'., Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/4., Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with., Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.				
		TWA (Respirable dust)	4 mg/m3	GB EH40
	Further information: For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/4 General methods for sampling and gravimetric analysis or respirable, thoracic and inhalable aerosols., The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m-3 8-hour TWA of			

	inhalable dust or 4 mg.m-3 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed to dust above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limits., Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system, and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'., Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/4., Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with., Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
CALCIUM CHLORIDE	Workers	Inhalation	Long-term local effects	5 mg/m3
	Workers	Inhalation	Local, short-term	10 mg/m3
	General population	Inhalation	Long-term local effects	2,5 mg/m3
Remarks:	Repeated dose toxicity			
	General population	Inhalation	Local, short-term	5 mg/m3
CALCIUM CARBONATE	Workers	Inhalation	Long-term systemic effects	10 mg/m3
	General population	Inhalation	Long-term systemic effects	10 mg/m3
	General population	Oral	Long-term systemic effects	6,1 mg/kg
	General population	Oral	Systemic, short-term	6,1 mg/kg

8.2 Exposure controls

Engineering measures

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Provide appropriate exhaust ventilation at places where dust is formed.

Personal protective equipment

Eye protection : Wear chemical splash goggles and face shield to protect eyes and skin from airborne dust.
Maintain eye wash station in immediate work area.

Hand protection

Remarks : The suitability for a specific workplace should be discussed

with the producers of the protective gloves.

Skin and body protection : Wear as appropriate:
Chemical resistant apron
Safety shoes
Dust impervious protective suit
Flame-resistant clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	granules
Colour	:	white
Odour	:	chlorine-like
Odour Threshold	:	No data available
Melting point/range	:	177 °C Decomposition: yes
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	:	No data available
Decomposition temperature		
Decomposition temperature	:	No data available
pH	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available

Solubility(ies)

Water solubility	:	No data available
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	:	0,94 - 0,96 g/ml
Relative vapour density	:	No data available

9.2 Other information

Oxidizing properties	:	No data available
Self-ignition	:	No data available
Evaporation rate	:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Product will not undergo hazardous polymerization.

10.4 Conditions to avoid

Conditions to avoid : Avoid heat, open flame, and prolonged storage at elevated temperatures.
excessive heat
Heat, flames and sparks.
Exposure to moisture

Keep away from heat, flame, sparks and other ignition sources.

10.5 Incompatible materials

Materials to avoid : Acids
Aldehydes
Alkali metals

alkalis
ammonium salts
aluminum
aluminum salts
brass
calcium salts
Combustible material
Copper alloys
ferrous metals
Fluorine
isocyanates
lead salts
magnesium
methyl vinyl ether
Mild steel
nitroparaffins
nitropropane
organic anhydrides
Organic materials
Phosphorus
Powdered metals
Reducing agents
sodium
strong bases
Strong oxidizing agents
Zinc

10.6 Hazardous decomposition products

Hazardous decomposition products : Chlorine
Halogenated compounds
Hydrogen chloride gas
Sulphur oxides
Zinc oxide fumes.
Sodium oxides
aluminum oxides
Copper oxides
Sulphur compounds
calcium oxide
chloride fumes
Carbon monoxide
Carbon dioxide (CO2)

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity : Remarks: Ingestion of large amounts of copper salts can

cause damage to the lining of the stomach and intestines, followed by red blood cell breakage and damage to the liver and kidneys. Low blood pressure and shock may occur as a result of severe tissue injury.

Components:

calcium hypochlorite:

Acute oral toxicity : LD50 (Rat): 850 mg/kg

Acute inhalation toxicity : Assessment: Corrosive to the respiratory tract.

Acute dermal toxicity : LD50 (Rabbit): > 2 g/kg

zinc sulphate (anhydrous):

Acute oral toxicity : LD50 (Rat): 1.710 mg/kg

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg

ALUMINUM SULFATE:

Acute oral toxicity : LD50 (Rat, female): > 2.000 - < 5.000 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg

copper sulphate:

Acute oral toxicity : LD50 (Rat): 481 mg/kg
Method: OECD Test Guideline 401
GLP: yes

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: No adverse effect has been observed in acute dermal toxicity tests.

CALCIUM HYDROXIDE:

Acute inhalation toxicity : Remarks: Corrosive to respiratory system.

calcium chloride:

Acute oral toxicity : LD50 (Rat): 2.301 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg

CALCIUM CARBONATE:

Acute oral toxicity : LD50 (Rat): 6.450 mg/kg

Acute inhalation toxicity : LC 50 (Rat): > 3 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Method: OECD Test Guideline 403
Assessment: Not classified as acutely toxic by inhalation under GHS.
Remarks: Aerosol

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks : Causes severe skin burns and eye damage.
Zinc sulfate may cause ulcers upon contact with skin.

Components:

calcium hypochlorite:

Result : Corrosive after 3 minutes to 1 hour of exposure

zinc sulphate (anhydrous):

Result : Slightly irritating to skin

ALUMINUM SULFATE:

Species : Rabbit
Result : Not irritating to skin

copper sulphate:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Slightly irritating to skin

CALCIUM HYDROXIDE:

Result : Irritating to skin

calcium chloride:

Result : Not irritating to skin

CALCIUM CARBONATE:

Result : Not irritating to skin

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks : May cause irreversible eye damage.

Components:

calcium hypochlorite:

Result : Corrosive to eyes

zinc sulphate (anhydrous):

Species : Rabbit
Method : OECD Test Guideline 405
Result : Corrosive to eyes

ALUMINUM SULFATE:

Species : Rabbit
Method : OECD Test Guideline 405
Result : Corrosive to eyes

copper sulphate:

Species : Rabbit
Method : OECD Test Guideline 405
Result : Corrosive to eyes

CALCIUM HYDROXIDE:

Result : Corrosive to eyes

calcium chloride:

Result : Severely irritating to eyes

CALCIUM CARBONATE:

Result : Not irritating to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

copper sulphate:

Test Type : Freund's complete adjuvant test
Species : Guinea pig
Method : OECD Test Guideline 406

Germ cell mutagenicity

Not classified based on available information.

Components:

ALUMINUM SULFATE:

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: Ames test
Test system: Escherichia coli
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

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

Test Type: Micronucleus test
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 487
Result: negative
GLP: yes

copper sulphate:

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

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse
Cell type: Bone marrow
Method: Directive 67/548/EEC, Annex V, B.12.
Result: negative

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Corrosive to the respiratory tract.

Components:

CALCIUM HYDROXIDE:

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment	:	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.

Further information

Product:

Remarks	:	No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

calcium hypochlorite:

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 0,049 - 0,16 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,067 mg/l Exposure time: 48 h
M-Factor (Acute aquatic toxicity)	:	10

zinc sulphate (anhydrous):

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0,28 - 0,48 mg/l Exposure time: 48 h Method: Flow through Remarks: Mortality
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,89 - 1,4 mg/l Exposure time: 48 h

Method: Static
Remarks: Intoxication

EC50 (Daphnia magna (Water flea)): 0,538 - 0,908 mg/l
Exposure time: 48 h
Method: Static
Remarks: Intoxication

Toxicity to algae/aquatic plants : (Green algae (Chlorella vulgaris)): 3 - 45 mg/l
End point: LC 50
Exposure time: 24 h
Method: Static
Remarks: Mortality

ALUMINUM SULFATE:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Based on similar product.

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): > 1.000 mg/l
Exposure time: 180 min
Test Type: Static
Method: OECD Test Guideline 209
GLP: yes
Remarks: Based on similar product.

copper sulphate:

Toxicity to fish : LC50 (Fish): 1 - 2,5 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,024 mg/l
Exposure time: 48 h

M-Factor (Acute aquatic toxicity) : 10

calcium chloride:

Toxicity to fish : LC50 (Bluegill (Lepomis macrochirus)): 9.500 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Water flea (Ceriodaphnia dubia)): 1.770 - 2.030 mg/l
Exposure time: 48 h
Method: Static
Remarks: Mortality

CALCIUM CARBONATE:

Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): > 56.000 mg/l
Exposure time: 96 h
Test Type: static test

12.2 Persistence and degradability

Components:

calcium hypochlorite:

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

ALUMINUM SULFATE:

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

copper sulphate:

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

CALCIUM HYDROXIDE:

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

calcium chloride:

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

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: The bioaccumulation potential cannot be determined.

Components:

zinc sulphate (anhydrous):

Bioaccumulation : Species: Green algae (Chlorella vulgaris)
Exposure time: 21 d
Concentration: 35,5 mg/l
Bioconcentration factor (BCF): 1.921
Method: Static

ALUMINUM SULFATE:

Bioaccumulation : Species: Atlantic salmon (Salmo salar)
Exposure time: 60 d
Bioconcentration factor (BCF): 76 - 190
Method: Flow through

Species: Atlantic salmon (Salmo salar)
Exposure time: 45 d
Concentration: 0,264 mg/l
Bioconcentration factor (BCF): 362
Method: Flow through

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 Endocrine disrupting properties

Product:

Assessment : 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.

12.7 Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic 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.

Dispose of in accordance with local regulations.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14: Transport information

14.1 UN number or ID number

ADR: UN1748

ADN: UN1748

RID: UN1748

IMDG-Code: UN1748

IATA-DGR: UN1748

14.2 UN proper shipping name

ADR: CALCIUM HYPOCHLORITE MIXTURE, DRY
ADN: CALCIUM HYPOCHLORITE MIXTURE, DRY
RID: CALCIUM HYPOCHLORITE MIXTURE, DRY
IMDG-Code: CALCIUM HYPOCHLORITE MIXTURE, DRY
IATA-DGR: Calcium hypochlorite mixture, dry

14.3 Transport hazard class(es)

ADR: 5.1
ADN: 5.1
RID: 5.1
IMDG-Code: 5.1
IATA-DGR: 5.1

14.4 Packing group

ADR: II
ADN: II
RID: II
IMDG-Code: II
IATA-DGR: II

14.5 Environmental hazards

ADR: Environmentally hazardous
ADN: Not applicable
RID: Environmentally hazardous
IMDG-Code: Marine pollutant
IATA-DGR: Not applicable
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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 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Not applicable
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
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
UK REACH List of substances subject to authorisation (Annex XIV)	:	Not applicable
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	:	Not applicable
Seveso III: Directive 2012/18/EU of the	P8	OXIDIZING LIQUIDS AND

European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

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Other regulations:

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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
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

15.2 Chemical safety assessment

No data available

SECTION 16: Other information

Further information

Revision Date: 23.03.2022

Classification of the mixture:		**Classification procedure:**
Ox. Sol. 2	H272	Calculation method
Met. Corr. 1	H290	Calculation method
Acute Tox. 4	H302	Calculation method
Skin Corr. 1B	H314	Calculation method
Eye Dam. 1	H318	Calculation method
Aquatic Acute 1	H400	Calculation method
Aquatic Chronic 1	H410	Calculation method

Full text of H-Statements

H272 : May intensify fire; oxidizer.

H290	:	May be corrosive to metals.
H302	:	Harmful if swallowed.
H314	:	Causes severe skin burns and eye damage.
H315	:	Causes skin irritation.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H335	:	May cause respiratory irritation.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic 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
Met. Corr.	:	Corrosive to metals
Ox. Sol.	:	Oxidizing solids
Skin Corr.	:	Skin corrosion
Skin Irrit.	:	Skin irritation
STOT SE	:	Specific target organ toxicity - single exposure
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
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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet
Key literature references and sources of data
SOLENIS Internal data
SOLENIS internal data including own and sponsored test reports
The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

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. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

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