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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 BLU

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

Use of the Substance/Mixture : Swimming Pool Sanitizer

<p>1.3 Details of the supplier of the safety data sheet Innovative Water Care SA Holding (Pty) Ltd NCP Factory Site, 9 Hytor Street, Chloorkop 1624 Kempton Park South Africa</p> <p>E-mail address of person responsible for the SDS: EHSProductSafetyTeam@solenis.com</p> <p>Product Information Contact your local Solenis representative</p>	<p>1.4 Emergency telephone number 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</p>
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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Eye irritation, Category 2

H319: Causes serious eye irritation.

Long-term (chronic) aquatic hazard, Category 3

H412: Harmful to aquatic life with long lasting effects.


2.2 Label elements

Classification (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Warning

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- Hazard statements : H319 Causes serious eye irritation.
H412 Harmful to aquatic life with long lasting effects.
- Precautionary statements : P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read carefully and follow all instructions.
- Prevention:**
P264 Wash skin thoroughly after handling.
- Response:**
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
- Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

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.
Material can create slippery conditions.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)
ALUMINUM SULFATE	10043-01-3 233-135-0 01-2119531538-36-xxxx	Met. Corr. 1; H290 Eye Dam. 1; H318	>= 1 - < 2,5
Citric Acid, monohydrate	5949-29-1 201-069-1 01-2119457026-42-xxxx	Eye Irrit. 2; H319 STOT SE 3; H335 (Respiratory system)	>= 1 - < 2,5
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1 939-253-5 01-2119965180-41-xxxx	Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 1	>= 0,25 - < 0,5
didecyldimethylammonium chloride	7173-51-5 230-525-2	Flam. Liq. 3; H226 Acute Tox. 3; H301	>= 0,25 - < 0,5

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		Skin Corr. 1B; H314 Eye Dam. 1; H318 STOT SE 3; H336 (Central nervous system) Aquatic Acute 1; H400 <u>Aquatic Chronic 2; H411</u> M-Factor (Acute aquatic toxicity): 10	
Substances with a workplace exposure limit :			
SUCROSE	57-50-1 200-334-9		>= 15 - < 25
STARCH	9005-25-8 232-679-6		>= 2,5 - < 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.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : 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)
- Risks : Causes serious eye irritation.

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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
Foam

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

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

Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO₂)
Hydrocarbons
Ammonia
Alcohols
ethers
Ketones
aluminum oxides
Sulphur oxides

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 : Material can create slippery conditions.
Water may cause extremely slippery conditions.
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 : Material can create slippery conditions.
Avoid dust formation.

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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 : For small spills, quickly contain and remove the spilled material using absorbent pads, socks, kitty litter, sawdust etc, then appropriately dispose. Do not leave absorbents to sit overnight, as they will become hard and difficult to remove. The remaining residue or film can be treated with dilute caustic (2%) or dilute liquid bleach (2–5%), allowed to soak for up to one hour, and clean with warm water (between 49C – 54C (120F – 130 F)) or flushed to a sewer using high volumes of water taking into account local guidelines.
 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 spillage on floor as the product can become very slippery.
 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. 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. When using do not smoke.

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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. 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
SUCROSE	57-50-1	OEL-RL	10 mg/m ³	ZA OEL
	Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
STARCH	9005-25-8	OEL-RL	10 mg/m ³	ZA OEL
	Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			

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

Substance name	End Use	Exposure routes	Potential health effects	Value
POLYETHYLENE GLYCOL	Workers	Inhalation	Long-term systemic effects	5,096556 mg/m ³
Remarks:	Repeated dose toxicity			
	Workers	Dermal	Long-term systemic effects	4,470663 mg/kg
Remarks:	Repeated dose toxicity			
	General population	Inhalation	Long-term systemic effects	1,2678 mg/m ³
Remarks:	Repeated dose toxicity			
	General population	Dermal	Long-term systemic effects	1,102435 mg/kg
Remarks:	Repeated dose toxicity			
	General population	Oral	Long-term systemic effects	2,20487 mg/kg
Remarks:	Repeated dose toxicity			

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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 when there is the potential for exposure of the eyes to liquid, vapor or mist.

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:
Safety shoes
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).

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : gel

Colour : blue

Odour : none

Odour Threshold : No data available

pH : 4,5 - 6,8
Concentration: 1 %

Melting point/freezing point : No data available


Boiling point/boiling range : No data available

Flash point : No data available

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Upper explosion limit / Upper flammability limit : No data available

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Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : No data available

Density : No data available

Solubility(ies)

Water solubility : soluble

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Oxidizing properties : No data available

9.2 Other information

Self-ignition : 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 : Heat, flames and sparks.

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

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10.5 Incompatible materials

Materials to avoid : Aldehydes
Alkali metals
alkalis
aluminum
Copper alloys
isocyanates
magnesium
Metals
metal nitrates
oleum
organic anhydrides
Oxidizing agents
Strong acids
Strong bases
strong reducing agents
Zinc

10.6 Hazardous decomposition products

Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO₂)
Hydrocarbons
Ammonia
Alcohols
ethers
Ketones
aluminum oxides
Sulphur oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Not classified based on available information.

Components:

ALUMINUM SULFATE:

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


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

Citric Acid, monohydrate:

Acute oral toxicity : LD50 (Rat): 3 g/kg

Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides:

Acute oral toxicity : LD50 (Rat): 358 mg/kg

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didecyldimethylammonium chloride:

Acute oral toxicity : LD50 (Rat): 238 mg/kg
Method: OECD Test Guideline 401
GLP: yes

Acute dermal toxicity : LD50 (Rabbit): 3.342 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Product:

Remarks : May cause skin irritation in susceptible persons.

Components:

ALUMINUM SULFATE:

Species : Rabbit
Result : Not irritating to skin

Citric Acid, monohydrate:

Result : Slightly irritating to skin

Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides:

Species : Rabbit
Result : Causes burns.

didecyldimethylammonium chloride:

Method : OECD Test Guideline 404
Result : Corrosive to skin
GLP : yes

SUCROSE:

Result : Possibly irritating to skin

STARCH:


Result : Not irritating to skin

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Remarks : Product dust may be irritating to eyes, skin and respiratory system.
Causes serious eye irritation.

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Components:

ALUMINUM SULFATE:

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

Citric Acid, monohydrate:

Result : Severely irritating to eyes

Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides:

Result : Corrosive to eyes

didecyldimethylammonium chloride:

Result : Corrosive to eyes

SUCROSE:

Result : Possibly irritating to eyes

STARCH:

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:

didecyldimethylammonium chloride:

Test Type : Buehler 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

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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

didecyldimethylammonium chloride:

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

Test Type: Chromosome aberration test in vitro
 Result: negative

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.


Components:

Citric Acid, monohydrate:

Assessment : May cause respiratory irritation.

didecyldimethylammonium chloride:

Assessment : May cause drowsiness or dizziness.

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STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

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.

Citric Acid, monohydrate:

Toxicity to fish : LC50 (Carassius auratus (goldfish)): 440 - 706 mg/l
 Exposure time: 96 h

Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides:

Toxicity to fish : LC50 (Cyprinodon variegatus (sheepshead minnow)): 0,860 mg/l

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Exposure time: 96 h
Test Type: flow-through test

LC50 (Oncorhynchus mykiss (rainbow trout)): 0,923 mg/l
Exposure time: 96 h
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,016 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (algae)): 0,049 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

M-Factor (Acute aquatic toxicity) : 10

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,00415 mg/l
End point: Reproduction Test
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Analytical monitoring: yes
GLP: yes

M-Factor (Chronic aquatic toxicity) : 1


didecyldimethylammonium chloride:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 0,2 - 0,5 mg/l
Exposure time: 96 h
Test Type: semi-static test

LC50 (Oncorhynchus mykiss (rainbow trout)): 0,328 - 0,511 mg/l
Exposure time: 96 h
Test Type: flow-through test

LC50 (Danio rerio (zebra fish)): 0,97 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Daphnia magna (Water flea)): 0,057 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yes

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- Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 0,062 mg/l
 End point: Growth inhibition
 Exposure time: 72 h
 Test Type: static test
 Method: OECD Test Guideline 201
 GLP: yes
- M-Factor (Acute aquatic toxicity) : 10
- Toxicity to microorganisms : EC10 (Pseudomonas putida): 0,13 mg/l
 Exposure time: 16 h
 Test Type: Growth inhibition
 Method: DIN 38412
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,021 mg/l
 Exposure time: 21 d
 Species: Daphnia magna (Water flea)
 Test Type: semi-static test
 Method: OECD Test Guideline 211
 GLP: yes

12.2 Persistence and degradability

Components:

ALUMINUM SULFATE:


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

Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides:

- Biodegradability : Result: Readily biodegradable.

didecyldimethylammonium chloride:

- Biodegradability : Test Type: aerobic
 Result: Readily biodegradable.
 Biodegradation: 69 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301D
 GLP: yes
- Biodegradation: 72 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301B
- Biodegradation: 87 - 94 %
 Exposure time: 28 d
 Method: OECD Test Guideline 302B
 Remarks: This surfactant complies with the biodegradability

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criteria as laid down in Regulation (EC) No.648/2004 on detergents.

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: The bioaccumulation potential cannot be determined.

Components:

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

Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides:

Bioaccumulation : Species: Bluegill (*Lepomis macrochirus*)
Exposure time: 60 d
Concentration: 0,25 mg/l
Bioconcentration factor (BCF): 80,4
Method: Flow through

Species: Bluegill (*Lepomis macrochirus*)
Exposure time: 60 d
Concentration: 0,25 mg/l
Bioconcentration factor (BCF): 33,3
Method: Flow through

didecyldimethylammonium chloride:


Bioaccumulation : Species: *Lepomis macrochirus* (Bluegill sunfish)
Exposure time: 46 d
Bioconcentration factor (BCF): 81,00

SUCROSE:

Partition coefficient: n-octanol/water : log Pow: -3,70

12.4 Mobility in soil

No data available

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12.5 Results of PBT and vPvB assessment

Product:

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

12.6 Other adverse effects

Product:

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

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

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.

SECTION 14: Transport information

14.1 UN number or ID number


ADR: Not dangerous goods

ADN: Not dangerous goods

RID: Not dangerous goods

IMDG-Code: Not dangerous goods

IATA-DGR: Not dangerous goods

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14.2 UN proper shipping name

ADR: Not dangerous goods
ADN: Not dangerous goods
RID: Not dangerous goods
IMDG-Code: Not dangerous goods
IATA-DGR: Not dangerous goods

14.3 Transport hazard class(es)

ADR: Not dangerous goods
ADN: Not dangerous goods
RID: Not dangerous goods
IMDG-Code: Not dangerous goods
IATA-DGR: Not dangerous goods

14.4 Packing group

ADR: Not dangerous goods
ADN: Not dangerous goods
RID: Not dangerous goods
IMDG-Code: Not dangerous goods
IATA-DGR: Not dangerous goods

14.5 Environmental hazards

ADR: Not applicable
ADN: Not applicable
RID: Not applicable
IMDG-Code: Not applicable
IATA-DGR: Not applicable


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.

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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

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 European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. : Not 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 : Not 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

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SECTION 16: Other information

Further information

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Classification of the mixture:

Eye Irrit. 2 H319
Aquatic Chronic 3 H412

Classification procedure:

Calculation method
Calculation method


Full text of H-Statements

H226 : Flammable liquid and vapour.
H290 : May be corrosive to metals.
H301 : Toxic if swallowed.
H302 : Harmful if swallowed.
H314 : Causes severe skin burns and eye damage.
H318 : Causes serious eye damage.
H319 : Causes serious eye irritation.
H335 : May cause respiratory irritation.
H336 : May cause drowsiness or dizziness.
H400 : Very toxic to aquatic life.
H410 : Very toxic to aquatic life with long lasting effects.
H411 : 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
Flam. Liq. : Flammable liquids
Met. Corr. : Corrosive to metals
Skin Corr. : Skin corrosion
STOT SE : Specific target organ toxicity - single exposure
ZA OEL : South Africa. The Regulations for Hazardous Chemical Agents, Occupational Exposure Limits
ZA OEL / OEL-RL : Occupational Exposure Limit Restricted limit - 8- hour exposure or equivalent (12 hour shifts)

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

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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

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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