

Product information ci 1300 cl (corrosion inhibitor)

Use

ci 1300 cl is a closed system and half closed system corrosion inhibitor. **ci 1300 cl** is composed of robust, excellent performing corrosion inhibitors, which maximise the performance of the treated systems. **ci 1300 cl** provides provides multi-metal inhibition for aluminium, aluminium alloys, ferrous alloys (LCS, cast iron, stainless steel, galvanized steel) as well as for copper alloys. **ci 1300 cl** is designed for use in industrial water systems such as chiller, cooling systems hot water systems, mixed glycol-water systems, engine cooling systems and compressor cooling systems. **ci 1300 cl** is specifically designed for use with deionised water. The range of temperature is between 5°C – 220°C.

Features

ci 1300 cl is less toxic compared to traditional formulations and contains no heavy metals, nitrite, molybdate or borate. The product provides an especially optimized new buffer system following SVHC regulations. **ci 1300 cl** minimizes biocide need due to absence of nitrite. **ci 1300 cl** is compatible with glycol systems.

These data are to be seen as typical values and should not be considered as specifications.

Dosing

ci 1300 cl should be fed undiluted, directly into the system. The use of a dosing pump is recommended for ease of feeding. Dosage requirements vary and depend upon a number of system operation characteristics. Especially the maximum system temperature and the material surface temperature are essential. Optimum performance can often be assured when **ci 1300 cl** is fed to a clean system. Recommended dosage rate is between

$t < 100^{\circ}\text{C} \Rightarrow 5000\text{ppm}$

$100^{\circ}\text{C} < t < 180^{\circ}\text{C} \Rightarrow 5000 \text{ bis } 7500\text{ppm}$

$180^{\circ}\text{C} > t < 220^{\circ}\text{C} \Rightarrow 7500 \text{ bis } 10000\text{ppm}$

A test kit is available.

Handling precautions

Suitable personal protective measures are provided in the safety data sheet.

Important Information

Every chemical product will be delivered with a Material Safety Data Sheet. Material Safety Data Sheets contain health and safety information relevant for your development of appropriate product handling procedures to protect your employees and customers. Our Material Safety Data Sheets should be read and understood by all of your supervisory personal and employees before using our products in your facilities.

Shelf life

3 months in opened containers.

2 years in originally sealed containers.

Storage conditions: dry, cool, frost-free and dark.

Packaging

ci 1300 cl is packed in 10kg drums, 30kg drums and 200kg drums.

All statements, information and data presented herein are believed to be accurate and reliable but are not to be taken as a guarantee, express warranty or implied warranty of merchantability of fitness for a particular purpose, or representation, express or implied, for which seller assumes legal responsibility, and they are offered solely for your consideration, investigation and verification. Statements or suggestions concerning possible use of this product are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent.

gwk		
Safety data sheet		Revision Date: 11.12.2018
		Print Datum: 22.08.2018
ci 1300 cl		Version: 2.2

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 : ci 1300 cl

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

Use of the Substance/Mixture : Corrosion inhibitor.

1.3 Details of the supplier of the safety data sheet gwk Gesellschaft Wärme Kältetechnik mbH Scherl 10 D-58540 Meinerzhagen Germany info@gwk.com	1.4 Emergency telephone number Emergency call Berlin +49 (0) 30 30686700 Product Information Contact your local gwk representative
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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Corrosive to metals, Category 1	H290: May be corrosive to metals.
Skin corrosion, Category 1A	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Chronic aquatic toxicity, Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word :

Danger

Hazard statements :

- H290 May be corrosive to metals.
- H314 Causes severe skin burns and eye damage.
- H317 May cause an allergic skin reaction.
- H412 Harmful to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

- P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
- 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/shower.
- 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.

Hazardous components which must be listed on the label:

- potassium hydroxide
- Reaction mass of trisodium 2-(hydroxyphosphinato)succinate and pentasodium 1-(hydroxyphosphinato)butane-1,2,3,4-tetracarboxylate
- 1H-Benzotriazole, 4(or 5)-methyl-, potassium salt
- SODIUM MERCAPTOBENZOTHAZOLE

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

Hazardous components

Chemical name	CAS-No. EC-No.	Classification	Concentration (% w/w)

	Registration number		
potassium hydroxide	1310-58-3 215-181-3 01-2119487136-33-xxxx	Acute Tox. 4; H302 Skin Corr. 1A; H314 Met. Corr. 1; H290	>= 5 - < 10
Reaction mass of trisodium 2-(hydroxyphosphinato)succinate and pentasodium 1-(hydroxyphosphinato)butane-1,2,3,4-tetracarboxylate	Not Assigned 701-079-0 01-2120227654-56-xxxx	Skin Sens. 1; H317	>= 5 - < 10
1H-Benzotriazole, 4(or 5)-methyl-, potassium salt	64665-53-8 265-002-8	Acute Tox. 4; H302 Skin Corr. 1; H314 Eye Dam. 1; H318 Aquatic Chronic 2; H411	>= 3 - < 5
Hexanoic acid, 6,6',6''-(1,3,5-triazine-2,4,6-triyltriimino)tris-, tripotassium salt	135043-69-5	Skin Irrit. 2; H315 Eye Irrit. 2; H319	>= 2,5 - < 5
2-Propenoic acid polymer with 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid monosodium salt and sodium phosphonate	110224-99-2	Eye Irrit. 2; H319 Aquatic Chronic 3; H412 Aquatic Chronic 3; H412	>= 1 - < 2,5
SODIUM MERCAPTOBENZOTHAZOLE	2492-26-4 219-660-8 01-2119493018-35-xxxx	Met. Corr. 1; H290 Skin Corr. 1C; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 0,1 - < 0,25

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 : Remove contaminated clothing. If irritation develops, get

medical attention.
 If on skin, rinse well with water.
 Wash contaminated clothing before re-use.

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 : No symptoms known or expected.

Risks : May cause an allergic skin reaction.
 Causes serious eye damage.
 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
 Foam
 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 : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : potassium oxide
 Carbon monoxide
 Carbon dioxide (CO₂)

Oxides of phosphorus
 Carbon oxides
 Nitrogen oxides (NO_x)
 nitrogen oxides (NO_x)

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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Personal precautions : Use personal protective equipment.
 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 : 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 : Do not breathe vapours/dust.
 Do not smoke.
 When diluting, always add the product to water. Never add water to the product.
 Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Container hazardous when empty.
 Avoid exposure - obtain special instructions before use.
 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 : Normal measures for preventive fire protection.

Hygiene measures : 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. Electrical installations / working materials must comply with the technological safety standards.

Storage class (TRGS 510) : 8B, Non-combustible, corrosive hazardous materials

Other data : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

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

Substance name	End Use	Exposure routes	Potential health effects	Value
potassium hydroxide	Workers	Inhalation	Local, long-term	1 mg/m ³
Remarks:	respiratory tract irritation			
	General population	Inhalation	Local, long-term	1 mg/m ³
Remarks:	respiratory tract irritation			

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.

Personal protective equipment

Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.

Hand protection

Remarks : butyl-rubber Nitrile rubber
The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Wear as appropriate:
Impervious clothing
Chemical resistant apron
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Discard gloves that show tears, pinholes, or signs of wear.

Respiratory protection : Recommended Filter type:

Filter type : Particulates type (P)

SECTION 9: Physical and chemical properties
9.1 Information on basic physical and chemical properties

Appearance : liquid

Colour : brown

Odour : No data available

Odour Threshold : No data available

pH : ca. 12,9

Melting point/freezing point : No data available

Boiling point/boiling range : 103 °C

Flash point : Not applicable

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	ca. 1,175 g/cm ³ (20 °C)
Solubility(ies)		
Water solubility	:	completely 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
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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.
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10.4 Conditions to avoid

Conditions to avoid	:	Stable under recommended storage conditions.
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Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid	:	Acids
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Alcohols
 aluminum
 Amines
 Bases
 chlorinated solvents
 halogenated hydrocarbons
 Metals
 nitrites
 Strong oxidizing agents
 sulphites
 Zinc

10.6 Hazardous decomposition products

Hazardous decomposition products : potassium oxide
 Carbon monoxide
 Carbon dioxide (CO₂)
 Oxides of phosphorus
 Carbon oxides
 Nitrogen oxides (NO_x)

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Not classified based on available information.

Components:

potassium hydroxide:

Acute oral toxicity : LD 50 (Rat): 333 mg/kg

Acute dermal toxicity : LD 50 (Rabbit): 1.260 mg/kg

Reaction mass of trisodium 2-(hydroxyphosphinato)succinate and pentasodium 1-(hydroxyphosphinato)butane-1,2,3,4-tetracarboxylate:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
 Method: OECD Test Guideline 401

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

1H-Benzotriazole, 4(or 5)-methyl-, potassium salt:

Acute oral toxicity : LD 50 (Rat, male): 930 mg/kg
 Remarks: Information given is based on data obtained from similar substances.

LD 50 (Rat): 675 mg/kg

Remarks: Information given is based on data obtained from similar substances.

LD 50 (Rat, female): 735 mg/kg

Remarks: Information given is based on data obtained from similar substances.

Acute dermal toxicity : LD (Rabbit): > 4.000 mg/kg
Remarks: Information given is based on data obtained from similar substances.

2-Propenoic acid polymer with 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid monosodium salt and sodium phosphonate:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

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

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Acute oral toxicity : LD 50 (Rat): 2.100 mg/kg

Acute inhalation toxicity : LC 50 (Rat): > 6,5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD 50 (Rabbit): > 7.940 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks: **May cause skin irritation in susceptible persons.**

Causes severe skin burns and eye damage.

The feeling of irritation or pain may be delayed.

Result: Repeated exposure may cause skin dryness or cracking.

Components:

potassium hydroxide:

Result: Corrosive to skin

Reaction mass of trisodium 2-(hydroxyphosphinato)succinate and pentasodium 1-(hydroxyphosphinato)butane-1,2,3,4-tetracarboxylate:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Mildly irritating to skin

1H-Benzotriazole, 4(or 5)-methyl-, potassium salt:

Species: Rabbit

Remarks: Information given is based on data obtained from similar substances.

Hexanoic acid, 6,6',6''-(1,3,5-triazine-2,4,6-triyltriimino)tris-, tripotassium salt:

Result: Irritating to skin

2-Propenoic acid polymer with 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid monosodium salt and sodium phosphonate:

Result: Not irritating to skin

SODIUM MERCAPTOBENZOTHAZOLE:

Species: Rabbit

Result: Corrosive after 1 to 4 hours of exposure

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks: May cause irreversible eye damage.

Components:

potassium hydroxide:

Result: Corrosive to eyes

Reaction mass of trisodium 2-(hydroxyphosphinato)succinate and pentasodium 1-(hydroxyphosphinato)butane-1,2,3,4-tetracarboxylate:

Species: Rabbit

Result: Mildly irritating to eyes

1H-Benzotriazole, 4(or 5)-methyl-, potassium salt:

Species: Rabbit

Remarks: Information given is based on data obtained from similar substances.

Hexanoic acid, 6,6',6''-(1,3,5-triazine-2,4,6-triyltriimino)tris-, tripotassium salt:

Result: Irritating to eyes

2-Propenoic acid polymer with 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid monosodium salt and sodium phosphonate:

Result: Irritating to eyes

SODIUM MERCAPTOBENZOTHAZOLE:

Species: Rabbit

Result: Corrosive to eyes

Respiratory or skin sensitisation
Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Product:

Remarks: May cause allergic skin reaction.

Components:
Reaction mass of trisodium 2-(hydroxyphosphinato)succinate and pentasodium 1-(hydroxyphosphinato)butane-1,2,3,4-tetracarboxylate:

Test Type: Maximisation Test

Species: Guinea pig

Method: OECD Test Guideline 406

Result: May cause sensitisation by skin contact.

1H-Benzotriazole, 4(or 5)-methyl-, potassium salt:

Species: Guinea pig

Remarks: Information given is based on data obtained from similar substances.

SODIUM MERCAPTOBENZOTHIAZOLE:

Test Type: Maximisation Test

Species: Guinea pig

Method: OECD Test Guideline 406

Remarks: Information given is based on data obtained from similar substances.

Germ cell mutagenicity

Not classified based on available information.

Components:
Reaction mass of trisodium 2-(hydroxyphosphinato)succinate and pentasodium 1-(hydroxyphosphinato)butane-1,2,3,4-tetracarboxylate:

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

Genotoxicity in vivo : Test Type: chromosome aberration assay
 Species: Mouse
 Cell type: Bone marrow
 Method: OECD Test Guideline 474

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Result: negative
GLP: yes

1H-Benzotriazole, 4(or 5)-methyl-, potassium salt:

- Genotoxicity in vitro :
- Test Type: Ames test
Metabolic activation: with metabolic activation
Result: positive
Remarks: Information given is based on data obtained from similar substances.
 - : Test Type: in vitro assay
Species: mammalian cells
Metabolic activation: without metabolic activation
Result: negative
Remarks: Information given is based on data obtained from similar substances.
 - : Test Type: Chromosome aberration test in vitro
Species: mammalian cells
Metabolic activation: with and without metabolic activation
Result: negative
Remarks: Information given is based on data obtained from similar substances.
 - : Test Type: Ames test
Metabolic activation: without metabolic activation
Result: negative
Remarks: Information given is based on data obtained from similar substances.

SODIUM MERCAPTOBENZOTHIAZOLE:

- Genotoxicity in vitro :
- Test Type: Ames test
Metabolic activation: with and without metabolic activation
Result: negative
- Genotoxicity in vivo :
- Test Type: In vivo micronucleus test
Species: Mouse
Result: negative
Remarks: Information given is based on data obtained from similar substances.

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

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:
potassium hydroxide:

Toxicity to fish : LC 50 (Gambusia affinis (Mosquito fish)): 80 mg/l
 Exposure time: 96 h
 Method: Static
 Remarks: Mortality

Reaction mass of trisodium 2-(hydroxyphosphinato)succinate and pentasodium 1-(hydroxyphosphinato)butane-1,2,3,4-tetracarboxylate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
 Exposure time: 96 h
 Test Type: semi-static test
 Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Water flea (Daphnia magna)): > 1.000 mg/l
 Exposure time: 48 h
 Test Type: static test
 Method: OECD Test Guideline 202

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

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 100 mg/l
 Exposure time: 21 d
 Species: Water flea (Daphnia magna)
 Test Type: semi-static test
 Method: OECD Test Guideline 211

1H-Benzotriazole, 4(or 5)-methyl-, potassium salt:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 180 mg/l

Exposure time: 96 h
 Method: OECD Test Guideline 203
 Remarks: Based on similar product.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 8,58 mg/l
 Exposure time: 48 h
 Remarks: Based on similar product.

Hexanoic acid, 6,6',6''-(1,3,5-triazine-2,4,6-triyltriimino)tris-, tripotassium salt:

Toxicity to fish : LC50 : > 3.300 mg/l
 Remarks: Information given is based on data on the components and the ecotoxicology of similar products.

Toxicity to daphnia and other aquatic invertebrates : EC50 : > 3.300 mg/l
 Exposure time: 48 h
 Remarks: Information given is based on data on the components and the ecotoxicology of similar products.

2-Propenoic acid polymer with 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid monosodium salt and sodium phosphonate:

Ecotoxicology Assessment

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

SODIUM MERCAPTOBENZOTHAZOLE:

Toxicity to fish : LC 50 (Oncorhynchus mykiss (rainbow trout)): 0,73 mg/l
 Exposure time: 96 h
 Test Type: flow-through test
 Method: OECD Test Guideline 203
 Remarks: Information given is based on data obtained from similar substances.

LC 50 (Bluegill (Lepomis macrochirus)): 3,8 mg/l
 Exposure time: 96 h
 Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC 50 (Water flea (Daphnia magna)): 19 mg/l
 Exposure time: 48 h
 Test Type: static test
 Method: OECD Test Guideline 202

Toxicity to algae : IC50 (Pseudokirchneriella subcapitata (green algae)): 0,3 mg/l
 Exposure time: 96 h
 Method: OECD Test Guideline 201

ErC50 (Pseudokirchneriella subcapitata (green algae)): 0,5 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201

Remarks: Information given is based on data obtained from similar substances.

NOEC (Pseudokirchneriella subcapitata (green algae)): 0,066 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Remarks: Information given is based on data obtained from similar substances.

Toxicity to fish (Chronic toxicity) : NOEC: 0,041 mg/l
 End point: Growth rate
 Exposure time: 89 d
 Species: Oncorhynchus mykiss (rainbow trout)
 Test Type: flow-through test
 Method: OECD Test Guideline 210
 Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,08 mg/l
 End point: Reproduction Test
 Exposure time: 21 d
 Species: Daphnia magna (Water flea)
 Method: OECD Test Guideline 211
 Remarks: Information given is based on data obtained from similar substances.

12.2 Persistence and degradability

Components:

Reaction mass of trisodium 2-(hydroxyphosphinato)succinate and pentasodium 1-(hydroxyphosphinato)butane-1,2,3,4-tetracarboxylate:

Biodegradability : Result: Not readily biodegradable.

Hexanoic acid, 6,6',6''-(1,3,5-triazine-2,4,6-triyltriimino)tris-, tripotassium salt:

Biodegradability : Result: Readily biodegradable.
 Biodegradation: 86,27 %
 Exposure time: 28 d
 Remarks: Information given is based on data obtained from similar substances.

SODIUM MERCAPTOBENZOTHAZOLE:

Biodegradability : Result: Not readily biodegradable.
 Remarks: Information given is based on data obtained from similar substances.

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: The bioaccumulation potential cannot be determined.

Components:

2-Propenoic acid polymer with 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid monosodium salt and sodium phosphonate:

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

SODIUM MERCAPTOBENZOTHAZOLE:

Bioaccumulation : Species: Cyprinus carpio (Carp)
 Exposure time: 6 Weeks
 Concentration: 0,01 mg/l
 Bioconcentration factor (BCF): < 8
 Remarks: Information given is based on data obtained from similar substances.

Partition coefficient: n-octanol/water : log Pow: 2,42
 pH: 7

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

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

12.6 Other adverse effects

Product:

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.
 Do not contaminate ponds, waterways or ditches with

chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
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

ADR: UN1719

RID: UN1719

INTERNATIONAL MARITIME DANGEROUS GOODS: UN1719

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: UN1719

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: UN1719

14.2 UN proper shipping name

ADR: CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE)

RID: CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE)

INTERNATIONAL MARITIME DANGEROUS GOODS: CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE)

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: Caustic alkali liquid, n.o.s. (POTASSIUM HYDROXIDE)

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: Caustic alkali liquid, n.o.s. (POTASSIUM HYDROXIDE)

14.3 Transport hazard class(es)

ADR: 8

RID: 8

INTERNATIONAL MARITIME DANGEROUS GOODS: 8

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: 8

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: 8

14.4 Packing group


ADR: II

RID: II

INTERNATIONAL MARITIME DANGEROUS GOODS: II

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: II

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: II

		
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14.5 Environmental hazards

ADR: Not applicable

RID: Not applicable

INTERNATIONAL MARITIME DANGEROUS GOODS: Not applicable

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: Not applicable

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: Not applicable

14.6 Special precautions for user

Not applicable

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

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 - 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 (EC) No 850/2004 on persistent organic pollutants : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Conditions of restriction for the following entries should be considered:
(3)

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

Water contaminating class : Not applicable
WGK 1 slightly water endangering (Germany)

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

DSL	:	This product contains one or more components that are not on the Canadian DSL and have annual quantity limits.
AICS	:	Not in compliance with the inventory
ENCS	:	Not in compliance with the inventory
KECI	:	Not in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	Not in compliance with the inventory
TCSI	:	Not in compliance with the inventory
TSCA	:	Not On TSCA Inventory

15.2 Chemical safety assessment

No data available

SECTION 16: Other information
Further information

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Classification of the mixture:

Met. Corr. 1	H290
Skin Corr. 1A	H314
Eye Dam. 1	H318
Skin Sens. 1	H317
Aquatic Chronic 3	H412

Classification procedure:

Calculation method
Based on product data or assessment
Based on product data or assessment
Calculation method
Calculation method

Full text of H-Statements

H290	:	May be corrosive to metals.
H302	:	Harmful if swallowed.
H314	:	Causes severe skin burns and eye damage.
H315	:	Causes skin irritation.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
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.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Acute aquatic toxicity
Aquatic Chronic	:	Chronic aquatic toxicity
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Met. Corr.	:	Corrosive to metals
Skin Corr.	:	Skin corrosion
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; 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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information : The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable

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to their circumstances.

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data

Internal data

internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

DE / EN