

SCI® 550

According to the Regulation No. 1907/2006/EC (REACH)
Annex II, as amended by Regulation No. 2020/878/EC

Date of revision: 2025-04-02 / EN
Date of previous revision: 2025-04-02 / EN

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product name: SCI® 550

Product description: Phosphonates, sodium hydroxide aqueous solution.

Product type: Liquid.

UFI: -

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

Relevant identified uses: Universal antiscalant for reverse osmosis membranes.

Uses advised against: Do not use for non-specified uses.

1.3. Details of the supplier of the safety data sheet

Company: JSC „Arionex LT“

Address: Ašigalio str. 6c, LT-49142, Kaunas, Lithuania

Telephone: +370 37 214669

E-mail: info@arionex.eu

1.4. Emergency telephone

Poisoning control and information bureau

Telephone number: 8 5 236 20 52

E-mail: info@tox.lt

Work time: All day (24 hours).

General emergency number: 112

SECTION 2: Hazards Identification**2.1. Classification of the substance or mixture**

Product type: Mixture

According to Regulation (EC) No 1272/2008 [CLP]

Skin corrosion Category 1A H314 Causes severe skin burns and eye damage.

Eye damage Category 1 H318 Causes serious eye damage.

2.2. Label elements

According to Regulation (EC) No 1272/2008 [CLP].

Pictogram:



GHS05

Signal Word: Dangerous.

Hazardous substances in the mixture: Sodium hydroxide.

Hazard Statement:

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

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Precautionary Statements:**Prevention:**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing.
Rinse skin with water/shower.

P363 Wash contaminated clothing before reuse.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+P351+P338 IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor/physician.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/container to accordance with local regulations.

2.3. Other hazards**Evaluation of PBT and vPvB results**

PBT: Not applicable.

vPvB: Not applicable.

No specific dangers known, if the regulations/notes for storage and handling are considered.

SECTION 3: Composition/Information on Ingredients**3.1. Substances**

Not applicable.

3.2. Mixtures

Chemical name: Phosphonates and sodium hydroxide aqueous solution.

Name	CAS No.	EINECS No.	Index No.	REACH Registration No.	Concentration range (%)	Classification according to Regulation (EC) No 1272/2008 [CLP]
Phosphonates	37971-36-1	253-733-5	-	01-2119436643-39-xxxx	<20	Met. Corr. 1, H290 Eye Irrit. 2, H319
Sodium hydroxide	1310-73-2	215-185-5	011-002-00-6	01-2119457892-27-XXXX	<20	Skin Corr. 1A; H314 Met Corr.1; H290

For the full text of the H-statements mentioned in the Section 16.

Additional information:

Specific concentration limits: Sodium hydroxide

Skin Corr. 1A; H314: $C \geq 5 \%$

Skin Corr. 1B; H314 $2 \% \leq C < 5 \%$

Skin Irrit. 2; H315: $0,5 \% \leq C < 2 \%$

Eye Irrit. 2; H319: $0,5 \% \leq C < 2 \%$

M-factor: None.

ATE (Acute toxicity estimates): None.

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SECTION 4: First-Aid Measures**4.1. Description of first aid measures**

Remove contaminated clothing. Show this safety data sheet when visiting your doctor. Symptomatic treatment. If symptoms occur, consult a doctor.

If inhaled:

If symptoms are felt, it is recommended to bring to fresh air to breathe. If symptoms occur, consult a doctor.

On skin contact:

Remove contaminated clothing, footwear, watches, etc. And clean thoroughly before re-using them. Wash immediately with plenty of water. Seek medical treatment in all cases of irritation.

On contact with eyes:

Rinse immediately with plenty of water for at least 10-15 minutes. Immediately obtain medical attention.

On ingestion:

Immediately rinse mouth and drink at least 0.5 liters of water, seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed**Both acute symptoms:**

If inhaled:	May cause respiratory tract irritation.
On skin contact:	May cause skin irritation or skin burns.
On contact with eyes:	May cause eye irritation and damage eyes.
On ingestion:	May cause burns of mouth, throat and stomach.

Delayed symptoms:

If inhaled:	No information available.
On skin contact:	Irritation, skin burns.
On contact with eyes:	Tearing, redness, pain, eye damage.
On ingestion:	Stomach ache.

4.4. Indication of any immediate medical attention and special treatment needed

Treatment: No information available.

SECTION 5: Firefighting Measures**5.1. Extinguishing media****Suitable extinguishing media:**

All types of extinguishing media are suitable: water, dry powder, carbon dioxide, foam, sand and other.

Unsuitable extinguishing media:

None known.

5.2. Special hazards arising from the substance or mixture

Dangerous products of combustion of the mixture was not observed. Sulfur oxides may be formed.

5.3. Advice for firefighters

Wear protective working tools such boots, coveralls, gloves, eye and face protection.

EN 469 - Protective clothing for firemen.

SECTION 6: Accidental Release Measures**6.1. Personal precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

Avoid contact with skin and eyes. Wear personal protective equipment as described under Heading 8.

6.1.2. For emergency responders

Avoid contact with skin and eyes. Wear personal protective equipment as described under Heading 8. Evacuate persons not participating in the liquidation of the accident from the room. Ensure the maximum possible ventilation of the premises.

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6.2. Environmental precautions

Do not wash product down sewage and drainage systems or into bodies of water. If getting really happened, heavily diluted with water. The mixture don't pose a significant risk to health.

6.3. Methods and material for containment and cleaning up

Absorb the spillage into sand or other inert material, shovel into suitable containers. If containment is not possible and material enters the drain, dilute as much as possible with water.

6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage**7.1. Precautions for safe handling**

In the workplace should be equipped good ventilation. Do not eat, drink or smoke in the workplace. Avoid possible contact with skin, eyes or mouth. Wash hands after use. If work clothes or protective equipment become contaminated, remove them immediately. Follow good manufacturing practices. Avoid release to the environment. Keep away from water-reactive substances. Protection against fire and explosion: No special precautions necessary.

7.2. Conditions for safe storage, including any incompatibilities

The product should be stored in a cool, dry area in original manufacturer's packaging.

Storage stability:

Keep storage area should be dry, cool, 5 to 35 °C. Avoid freezing and high temperature change.

Unsuitable (incompatible) storage of chemicals: Strong oxidizing agents.

The mixture don't present a risk of ignition or explosion.

7.3. Specific end use(s)

Used as an scale and corrosion inhibitor for cooling water treatment.

The concentrated product is dosed using a dosing pump in the system.

SECTION 8: Exposure Controls/Personal Protection**8.1. Control parameters**

Components with occupational exposure limits: HN 23:2011 Lithuania

Name of chemical substance			Exposure limits					
			Long term effects		Short-term effects		Limit size not exceeded	
No.	Name	CAS No.	mg/m ³	ppm	mg/m ³	ppm	mg/m ³	ppm
1	Sodium hydroxide	1310-73-2	-	-	-	-	2	-

Component of the mixture: 2-phosphonobutane-1,2,4-tricarboxylic acid (CAS no.37971-36-1)**DNEL values:**

DNEL workers, long term - systemic effects, dermal:	4,2 mg/kg bw/d
DNEL users, acute - systemic effects, ingestion:	65 mg/kg bw/d
DNEL users, long term - systemic effects, dermal:	2,1 mg/kg bw/d
DNEL users, acute - systemic effects, inhalative:	79 mg/m ³
DNEL users, long term - systemic effects, inhalative:	15 mg/m ³
DNEL users, acute - systemic effects, dermal:	40 mg/kg bw/d

Component of the mixture: sodium hydroxide (CAS no. 1310-73-2)**DNEL values:**

DNEL Long-term, local effects, inhalation, for workers:	1 mg/m ³ .
DNEL Long-term, local effects, inhalation, for users:	1 mg/m ³ .

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Component of the mixture: 2-phosphonobutane-1,2,4-tricarboxylic acid (CAS no.37971-36-1)**PNEC values:**

PNEC Freshwater:	3,3 mg/l
PNEC Marine water:	0,33 mg/l
PNEC Wastewater treatment plants:	50,4 mg/l
PNEC Sediment (freshwater):	1,47 mg/kg dwt.
PNEC Soil:	0,491 mg/kg dwt.

8.2. Exposure controls**8.2.1. Personal protective equipment**

General safety and hygiene measures: General indoor ventilation. Do not eat, drink or smoke when working with product to avoid contact with skin or mouth. Remove contaminated clothing, footwear, etc., and clean thoroughly before re-using them.

Respiratory protection. Not necessary.

Eye protection. Wear approved glasses or safety goggles (EN 166) to prevent contact with eyes.

Skin protection. Wear rubber gloves (EN 374), usual work clothes, rubber boots to prevent contact with skin. Information on gloves:

Material: Butyl rubber	Material: Viton (R)
Penetration time:> 480 min.	Penetration time:> 480 min
Thickness of gloves: 0.5 mm	Thickness of gloves: 0.7 mm
Material: Chloroprene	Material: PVC
Penetration time:> 480 min.	Penetration time:> 480 min
Thickness of gloves: 0.55 mm.	Thickness of gloves:> 0.5 mm

Protection against thermal hazards: Not required.

8.2.2. Environmental exposure controls

Do not wash product down sewage and drainage systems or into bodies of water.

9. PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Physical state:	Liquid;
Colour:	Yellowish-brown;
Odour:	Weak smell product;
Odour threshold:	Not determined;
Melting/freezing point:	-5°C;
Boiling point/range:	100 ÷ 130 °C;
Flammability (solid, gas):	Not applicable;
Upper/lower flammability:	Not determined;
Flash point:	Not determined;
Auto-ignition temperature:	Not determined;
Decomposition temperature:	Not determined;
pH (20 °C):	6,0 ÷ 6,5;
Viscosity:	Not determined;
Solubility:	Soluble in water;
Partitioning coefficient n-octanol/water (log Kow):	Not applicable;
Vapour pressure:	Not determined;
Density (20 °C):	1,210 g/cm ³ ;
Relative vapor density:	Not determined;
Particle size:	Not applicable;

All the listed properties apply to the product (mixture).

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9.2. Other Information

Explosive materials:	Not applicable.
Flammable gases:	Not applicable.
Aerosols:	Not applicable.
Oxidizing gases:	Not applicable.
Compressed gas:	Not applicable.
Flammable liquids:	Not applicable.
Flammable solids:	Not applicable.
Self-reactive substances:	Not applicable.
Pyrophoric liquids:	Not applicable.
Pyrophoric solids:	Not applicable;
Substances and mixtures which, in contact with water, emit flammable gases:	Not applicable.
Self-heating substances and mixtures:	Not applicable.
Oxidizing liquids:	Not applicable.
Oxidizing solids:	Not applicable.
Organic peroxides:	Not applicable.
Corrosive to metals:	Not applicable.
Desensitized explosives:	Not applicable.

No data available.

SECTION 10: Stability and Reactivity**10.1. Reactivity**

No hazardous reactions if stored and handled as prescribed/indicated.

10.2. Chemical stability

The product is stable if stored and handled as prescribed/indicated (see Heading 7).

10.3. Possibility of hazardous reactions

Under normal conditions of storage and use, no hazardous reaction occurs.

10.4. Conditions to avoid

Avoid freezing.

10.5. Incompatible materials

Strong acids, alkalis and oxidizing agents.

10.6. Hazardous decomposition products

The product is stable, but heating may release hazardous decomposition products: CO, CO₂, PO_x, NO_x.

SECTION 11: Toxicological Information**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity**

Skin contact. Based on available data, the classification are not met.

Tests with rabbits: LD50 (PBTC*Na): > 4000 mg/kg, LD50=1350 mg/kg bw (Sodium hydroxide).

Ingestion. Based on available data, the classification are not met.

Tests with rats: LD50 (PBTC): > 6500 mg/kg, LD50=500 mg/kg bw (Sodium hydroxide).

Inhalation. Not volatile. Based on available data, the classification are not met. Tests with rats: LC50 (PBTC*Na): > 1979 mg/l.

Skin corrosion / irritation: Skin corrosion Category 1 Causes severe skin burns and eye damage.

Data on sodium hydroxide: Skin damage/irritation rabbit: Corrosive effect (OECD Guideline 404).

Eye damage / irritation: Eye damage Category 1 Causes serious eye damage.

Data on sodium hydroxide: Serious eye damage (irritation) rabbit: irreversible damage (OECD Guideline 405).

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Sensitization: Skin: Based on available data, the classification are not met.
Respiratory: Based on available data, the classification are not met.

Mutagenicity: Based on available data, the classification are not met.

Carcinogenicity: Based on available data, the classification are not met.

Reproductive toxicity: Based on available data, the classification are not met.

Specific target organ toxicity (STOT SE) – single exposure: Based on available data, the classification are not met.

Specific target organ toxicity (STOT RE) – repeated exposure: Based on available data, the classification are not met.

Aspiration hazard: Based on available data, the classification are not met.

Information on likely routes of exposure

Skin contact: Direct contact with product may cause serious eye damage or irritation.

Eye contact: Mixture causes eye irritation and damage. Eye protection must be worn.

Inhalation: The mixture is not volatile. The mixture has corrosive properties.

Ingestion: the mixture has corrosive properties.

Symptoms related to the physical, chemical and toxicological characteristics

Skin contact: Direct contact with product may cause serious eye damage or irritation.

Eye contact: Mixture causes eye irritation and damage. Eye protection must be worn.

Inhalation: The mixture is not volatile. The mixture has corrosive properties.

Ingestion: The mixture has corrosive properties.

Delayed and immediate effects as well as chronic effect from short and long-term exposureShort time exposure:

Potential immediate effect: Not available.

Potential delayed effect: Not available.

Long term exposure:

Potential immediate effect: Not available.

Potential delayed effect: Not available.

Potential chronic health effect:

Carcinogenicity: No known significant effect or critical hazards.

Mutagenicity: No known significant effect or critical hazards.

Reproductive toxicity: No known significant effect or critical hazards.

11.2. Information on other hazardsEndocrine disrupting properties:

Based on available data, the classification are not met.

Other information:

None.

SECTION 12: Ecological Information**12.1. Toxicity**

The product does not have any known adverse effects on the aquatic organisms tested.

Ecotoxicity to aquatic organisms:**Product component: sodium hydroxide CAS No. 1310-73-2**

Acute toxicity for fish:

LC50 = 45,4 mg/l, *Oncorhynchus mykiss* 96 h.

LC50 = 160 mg/l, *Carassius auratus* (Goldfish) 96 h.

LC50 = 189 mg/l, *Leuciscus idus melanotus* (Golden orfe) 48 h.

LC50 = 125 mg/l, *Gambusia affinis* (Mosquitofish) 24, 48, 96 h.

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Acute toxicity for invertebrates:

EB = 40-240 mg/l, *Daphnia magna* (*Daphnia magna*).

LC50 = 40 mg/l, *Ophryotrocha diadema* (Marine polychaete) 48 h.

Acute toxicity for microorganisms:

EC50 = 22 mg/l, *Photobacterium phosphoreum* 15min.

Product component: 2-Phosphonobutane-1,2,4-tricarboxylic acid (CAS no. 37971-36-1)

Toxicity to algae:

EC50 > 1081 mg/l/72h (OECD 201) *Desmodesmus subspicatus* (green algae).

EC10=33,3 - 65,5 mg/l/72h (OECD 201) *Desmodesmus subspicatus* (green algae).

Toxicity to *Daphnia*:

EC50 > 1071 mg/l/48h (OECD 202) *Daphnia magna* (Big water flea).

EC50 = 329 - 1071 mg/l/21 days (OECD 211) *Daphnia magna* (Big water flea).

NOEC = 104 mg/l/21d (OECD 211) *Daphnia magna* (Big water flea).

Toxicity to fish:

LC50 > 1042 mg/l/96h (OECD 204) *Brachydanio rerio* (zebra-fish).

NOEC >= 1042 mg/l/14 days (OECD 204) *Brachydanio rerio* (zebra-fish).

Further details:

Acute earthworm toxicity: NOEC *Eisenia fetida*: 1000 mg/kg dw soil /14d (OECD 207).

Conclusion: Based on available data, the classification are not met.

12.2. Persistence and degradability

Completely soluble in water.

Component of mixture: Sodium hydroxide

Sodium hydroxide is completely soluble in water. The substance does not meet the criteria for biodegradation. In contact with water, it quickly splits into sodium and hydroxyl ions.

Component of mixture: ATMP

ATMP is not readily biodegradable.

0% (OECD 301 D/E); 17% (OECD 302B); 30-40% (OECD 302 A)

Abiotic degradation (OECD 111): no hydrolysis.

Half-life in soil: about 142 days (OECD 304 A).

12.3. Bioaccumulative potential

Component of mixture: Sodium hydroxide

This material is considered non-accumulative.

12.4. Mobility in soil

Component of mixture: 2-phosphonobutane-1,2,4-tricarboxylic acid (CAS no. 37971-36-1)

Unnaturally biodegradable. Partition coefficient: n-octanol / water: log Pow: log Pow: -1,36.

Component of mixture: Sodium hydroxide

Potassium hydroxide is easily soluble in water and completely dissociates into K⁺ and OH⁻.

12.5. Results of PBT and vPvB assessment

The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative).

12.6. Endocrine disrupting properties

The substances in the mixture don't have endocrine disrupting properties.

12.7. Other adverse effects

None.

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SECTION 13: Disposal Considerations**13.1. Waste treatment methods**

Not classified as harmful to aquatic organisms. Not classified as harmful to birds. Not allowed to dispose of empty containers or waste into the environment. Dispose of according to the local legislation. Empty containers should be returned to the supplier.

Waste code of packages:	15 01 02	plastic packaging
	15 01 10*	packaging containing residues of or contaminated by hazardous substances
Waste code of mixture:	06 01 04	Phosphoric and phosphorus acid (salt)

SECTION 14: Transport Information**14.1. UN Number or ID number**

None.

14.2. UN Proper Shipping Name

None.

14.3. Transport hazard class(es)

None.

14.4. Packing Group

None.

14.5. Environmental hazards

None.

14.6. Special precautions for user

None.

14.7. Maritime transport in bulk according to IMO instruments

None.

The product is not covered by the international regulation on the transport of dangerous goods (IMDG/ IATA, ADR/RID) and therefore no classification is required. No special precautions are needed apart from those mentioned under Heading 8.

SECTION 15: Regulatory Information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010/EC, Regulation (EC) No 1272/2008 [CLP] and Regulation (EC) No. 2020/878.

15.2. Chemical Safety Assessment

Chemical Safety Assessment not required.

SECTION 16: Other Information

SCI® 550 - For industrial use only.

SCI® 550 safety data sheets and technical information developed by the manufacturer.

Full text of H-Statements

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.

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Abbreviations:

CAS	Chemical Abstracts Service
EINECS	European Inventory of Existing Chemical Substances
GHS	Globally Harmonised System of Classification and Labelling of Chemicals
CLP	Classification, labelling and packaging of substances and mixtures
LD50	Lethal Concentration
LC50	Median lethal dose
EC50	Median effective concentration
UN	United Nations number
ATE	Acute toxicity estimate
DNEL	Derived no effect level
PNEC	Predicted non-effect concentration
PBT	Persistent, bioaccumulative and toxic
vPvB	Very persistent and very bioaccumulative

The information on this data sheet reflects the currently available knowledge and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product, including the use of the product in combination with any other product or any other process, is the responsibility of the user. It is implicit that the user is responsible for determining appropriate safety measures and for applying the legislation covering his own activities. Safety data sheet available for professional user on request.