

SAFETY DATA SHEET

In accordance with the Regulations on the content of the safety data sheet
("Sl. glasnik RS", br. 11/24)



Frostschutz OC / Antigelo OC

Revision Date 19.03.2025

Version 10.0

Print Date 16.12.2025

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

1.1 Product identifier

Trade name : Frostschutz OC / Antigelo OC
UFI: JDVJ-90KV-H00J-2A5S

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

Product use : Concrete admixtures

1.3 Details of the supplier of the safety data sheet

Company name of supplier : Sika Srbija d.o.o.
Patrijarha Pavla 1
22310 Šimanovci
Srbija
Telephone : +381 22 21 55 777
Telefax : +381 22 21 55 780
E-mail address of person responsible for the SDS : ehs@rs.sika.com

1.4 Emergency telephone number

National Toxicology Institute -
+381 11 360 84 40 (toxicologist on duty - 0- 24h)

SECTION 2: Hazards identification

Type of product : Mixture

2.1 Classification of the substance or mixture

Classification (according to regulation governing the classification, packaging and labeling of chemicals)

Acute toxicity, Category 4	H302: Harmful if swallowed.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Long-term (chronic) aquatic hazard, Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (according to regulation governing the classification, packaging and labeling of chemicals)

Hazard pictograms :



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Signal word	:	Danger
Hazard statements	:	H302 Harmful if swallowed. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H412 Harmful to aquatic life with long lasting effects.
Precautionary statements	:	Prevention: P261 Avoid breathing mist or vapours. P264 Wash skin thoroughly after handling. P273 Avoid release to the environment. P280 Wear protective gloves/ eye protection/ face protection. Response: 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. P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

Hazardous components which must be listed on the label:

nitric acid, calcium potassium salt, hydrate

2-octyl-2H-isothiazole-3-one (OIT)

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.

Contains a biocide in order to protect the product. Active ingredient: 2-octyl-2H-isothiazole-3-one (OIT), 26530-20-1. Please use treated articles responsibly.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Registration number	Classification (according to regulation governing the classification, packaging and labeling of chemicals)	Concentration (% w/w)
nitric acid, calcium potassium salt, hydrate	Not Assigned 480-110-7 01-0000020060-90-XXXX	Acute Tox. 4; H302 Eye Dam. 1; H318	>= 40 - < 60

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nitric acid, ammonium calcium salt	15245-12-2 239-289-5 01-2119493947-16-XXXX	Acute Tox. 4; H302 Eye Dam. 1; H318	$\geq 3 - < 5$
2-octyl-2H-isothiazole-3-one (OIT)	26530-20-1 247-761-7 01-2120768921-45-XXXX	Acute Tox. 3; H301 Acute Tox. 2; H330 Acute Tox. 3; H311 Skin Corr. 1; H314 Eye Dam. 1; H318 Skin Sens. 1A; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 100 M-Factor (Chronic aquatic toxicity): 100	$\geq 0,0025 - < 0,025$

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.
- If inhaled : Move to fresh air.
Consult a physician after significant exposure.
- In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
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.
Keep eye wide open while rinsing.
- If swallowed : Do not induce vomiting without medical advice.
Rinse mouth with water.

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Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

- | | |
|----------|---|
| Symptoms | : Gastrointestinal discomfort
Allergic reactions
Excessive lachrymation
See Section 11 for more detailed information on health effects and symptoms. |
| Risks | : Harmful if swallowed.
May cause an allergic skin reaction.
Causes serious eye damage.

irritant effects
sensitising effects |

4.3 Indication of any immediate medical attention and special treatment needed

- | | |
|-----------|--------------------------|
| Treatment | : Treat symptomatically. |
|-----------|--------------------------|

SECTION 5: Firefighting measures

5.1 Extinguishing media

- | | |
|------------------------------|--|
| Suitable extinguishing media | : In case of fire, use water/water spray/water jet/carbon dioxide/sand/foam/alcohol resistant foam/chemical powder for extinction. |
|------------------------------|--|

5.2 Special hazards arising from the substance or mixture

- | | |
|-------------------------------|--|
| Hazardous combustion products | : No hazardous combustion products are known |
|-------------------------------|--|

5.3 Advice for firefighters

- | | |
|---|--|
| Special protective equipment for firefighters | : In the event of fire, wear self-contained breathing apparatus. |
| Further information | : Standard procedure for chemical fires. |

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- | | |
|----------------------|---|
| Personal precautions | : Use personal protective equipment.
Deny access to unprotected persons. |
|----------------------|---|

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6.2 Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system. 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 : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid exceeding the given occupational exposure limits (see section 8).
Do not get in eyes, on skin, or on clothing.
For personal protection see section 8.
Persons with a history of 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.
Smoking, eating and drinking should be prohibited in the application area.
Follow standard hygiene measures when handling chemical products

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

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 re-sealed and kept upright to prevent leakage. Store in accordance with local regulations.

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : Consult most current local Product Data Sheet prior to any use.

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL)

Substance name	End Use	Exposure routes	Potential health effects	Value
nitric acid, ammonium calcium salt	Workers	Skin contact		13,9 mg/m3
	Workers	Inhalation		24,5 mg/m3
	Consumers	Ingestion		8,33 mg/m3
	Consumers	Inhalation		6,3 mg/m3

Predicted No Effect Concentration (PNEC) :

Substance name	Environmental Compartment	Value
nitric acid, ammonium calcium salt	Fresh water	0,45 mg/l
	Marine water	0,045 mg/l

8.2 Exposure controls

Engineering measures

Maintain air concentrations below occupational exposure standards.
Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

- Eye/face protection : Safety glasses with side-shields conforming to EN166
Eye wash bottle with pure water
- Hand protection : Chemical-resistant, impervious gloves complying with an approved standard must be worn at all times when handling chemical products. Reference number EN 374. Follow manufacturer specifications.
Suitable for short time use or protection against splashes:
Butyl rubber/nitrile rubber gloves (> 0,1 mm)
Contaminated gloves should be removed.
Suitable for permanent exposure:
Viton gloves (0.4 mm),
breakthrough time >30 min.
- Skin and body protection : Protective clothing (e.g. Safety shoes acc. to EN ISO 20345, long-sleeved working clothing, long trousers). Rubber aprons and protective boots are additionally recommended for mixing and stirring work.
- Respiratory protection : No special measures required.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid (20 °C)
Colour : light yellow
Odour : characteristic

Melting point/ range / Freezing point : No data available

Boiling point/boiling range : No data available

Flammability (solid, gas) : No data available

Upper/lower flammability or explosive limits

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Flash point : Not applicable

Auto-ignition temperature : No data available

Decomposition temperature : No data available

pH : ca. 3,35 (20 °C)
Concentration: 100 %

Viscosity

Viscosity, kinematic : > 20,5 mm²/s (40 °C)

Solubility(ies)

Water solubility : soluble

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

Vapour pressure : 23 hPa

Density : ca. 1,336 g/cm³ (20 °C)

Relative vapour density : No data available

9.2 Other information

Oxidizing properties : The substance or mixture is not classified as oxidizing.

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SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

The product is chemically stable.

10.3 Possibility of hazardous reactions

Hazardous reactions : No hazards to be specially mentioned.

10.4 Conditions to avoid

Conditions to avoid : No data available

10.5 Incompatible materials

Materials to avoid : No data available

10.6 Hazardous decomposition products

:
No hazardous decomposition products are known.

SECTION 11: Toxicological information

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

Acute toxicity

Harmful if swallowed.

Components:

nitric acid, ammonium calcium salt:

Acute oral toxicity : LD50 Oral (Rat): > 301 mg/kg

Acute toxicity estimate: 301,04 mg/kg
Method: Calculation method

Acute dermal toxicity : LD50 Dermal (Rat): > 2.001 mg/kg

2-octyl-2H-isothiazole-3-one (OIT):

Acute oral toxicity : Acute toxicity estimate: 125 mg/kg
Method: Acute toxicity estimate according to Regulation (EC)
No. 1272/2008

Acute inhalation toxicity : Acute toxicity estimate: 0,27 mg/l
Test atmosphere: dust/mist

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Method: Acute toxicity estimate according to Regulation (EC)
No. 1272/2008

Acute dermal toxicity : Acute toxicity estimate: 311 mg/kg
Method: Acute toxicity estimate according to Regulation (EC)
No. 1272/2008

Skin corrosion/irritation

Not classified due to lack of data.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified due to lack of data.

Germ cell mutagenicity

Not classified due to lack of data.

Carcinogenicity

Not classified due to lack of data.

Reproductive toxicity

Not classified due to lack of data.

STOT - single exposure

Not classified due to lack of data.

STOT - repeated exposure

Not classified due to lack of data.

Aspiration toxicity

Not classified due to lack of data.

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.

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SECTION 12: Ecological information

12.1 Toxicity

Components:

nitric acid, ammonium calcium salt:

Toxicity to fish : LC50 (Fish): 447 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 100 mg/l
aquatic invertebrates Exposure time: 48 h

2-octyl-2H-isothiazole-3-one (OIT):

M-Factor (Acute aquatic tox- : 100
icity)

M-Factor (Chronic aquatic : 100
toxicity)

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

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:

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

Components:

nitric acid, calcium potassium salt, hydrate:

Additional ecological information : There is no data available for this product.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : The generation of waste should be avoided or minimized wherever possible.
Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way.
Dispose of surplus and non-recyclable products via a licensed waste disposal contractor.
Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

14.1 UN number or ID number

ADR : Not regulated as a dangerous good
IMDG : Not regulated as a dangerous good
IATA : Not regulated as a dangerous good

14.2 UN proper shipping name

ADR : Not regulated as a dangerous good
IMDG : Not regulated as a dangerous good
IATA : Not regulated as a dangerous good

14.3 Transport hazard class(es)

ADR : Not regulated as a dangerous good
IMDG : Not regulated as a dangerous good
IATA : Not regulated as a dangerous good

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14.4 Packing group

ADR	: Not regulated as a dangerous good
IMDG	: Not regulated as a dangerous good
IATA (Cargo)	: Not regulated as a dangerous good
IATA (Passenger)	: Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

International Chemical Weapons Convention (CWC) : Not applicable
Schedules of Toxic Chemicals and Precursors

REACH Information: All substances contained in our Products are
- registered by our upstream suppliers, and/or
- registered by us, and/or
- excluded from the regulation, and/or
- exempted from the registration.

Rule book on Bans and Restrictions of Production, Placing on the Market and Use of Chemicals (State Gazette, Nr. 90/2013, 25/2015, 2/2016, 44/2017, 36/2018, 9/2020, 57/2022 and 29/2024) : Conditions of restriction for the following entries should be considered: Number on list 3

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : None of the components are listed (=> 0.1 %).

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Regulation (EU) No 2024/590 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

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

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of dangerous chemicals

Regulation (EU) 2019/1148 on the marketing and use of explosives precursors

This product is regulated by Regulation (EU) 2019/1148: : nitric acid, ammonium calcium salt (ANNEX II)
all suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.

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

Volatile organic compounds : Law on the incentive tax for volatile organic compounds (VOCV)
no VOC duties

Directive 2010/75/EU of 24 November 2010 on industrial and livestock rearing emissions (integrated pollution prevention and control)

Volatile organic compounds (VOC) content: 0,25% w/w

Other regulations:

Rulebook on the content of a safety data sheet (Official Gazette No. 11/24).

Rulebook on classification, packaging, labeling and advertising of chemicals and products in accordance with UN Globally Harmonized System of Classification and Labelling ("State Gazz. RS", 105/2013, 52/2017, 21/2019, 40/2023).

Law on chemicals ("Off. gazette RS" No. 36/09, 88/10, 92/11, 93/12 and 25/15)

Law on waste management ("Off. Gazette RS" No. 36/09, 88/10, 14/16, 95/18 - other law, 35/2023)

Rulebook on categories, testing and classification of waste ("Off. gazette RS" No. 56/10, 93/19 and 39/21)

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this mixture by the supplier.

SECTION 16: Other information

Full text of H-Statements

H301 : Toxic if swallowed.
H302 : Harmful if swallowed.
H311 : Toxic in contact with skin.
H314 : Causes severe skin burns and eye damage.
H317 : May cause an allergic skin reaction.

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H318	: Causes serious eye damage.
H330	: Fatal if inhaled.
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
Skin Corr.	: Skin corrosion
Skin Sens.	: Skin sensitisation
ADR	: European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS	: Chemical Abstracts Service
DNEL	: Derived no-effect level
EC50	: Half maximal effective concentration
GHS	: Globally Harmonized System
IATA	: International Air Transport Association
IMDG	: International Maritime Code for Dangerous Goods
LD50	: Median lethal dosis (the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals)
LC50	: Median lethal concentration (concentrations of the chemical in air that kills 50% of the test animals during the observation period)
MARPOL	: International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978
OEL	: Occupational Exposure Limit
PBT	: Persistent, bioaccumulative and toxic
PNEC	: Predicted no effect concentration
REACH	: Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency
SVHC	: Substances of Very High Concern
vPvB	: Very persistent and very bioaccumulative

according to regulation governing the classification, packaging and labeling of chemicals	: (REGULATION (EC) No 1272/2008); Rulebook on classification, packaging, labeling and advertising of chemicals and products in accordance with UN Globally Harmonized System of Classification and Labelling ("State Gazz. RS", 105/2013, 52/2017, 21/2019, 40/2023).
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Further information

Classification of the mixture:

Acute Tox. 4	H302
Eye Dam. 1	H318
Skin Sens. 1	H317

Classification procedure:

Calculation method
Calculation method
Calculation method

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|| Aquatic Chronic 3

H412

Calculation method

The information contained in this Safety Data Sheet corresponds to our level of knowledge at the time of publication. All warranties are excluded. Our most current General Sales Conditions shall apply. Please consult the product data sheet prior to any use and processing.



Changes as compared to previous version !

RS / EN