

## AG050101 - SILCOR 501

## Safety Data Sheet

According to Annex II to REACH - Regulation (EU) 2020/878 and to Annex II to UK REACH

## SECTION 1. Identification of the substance/mixture and of the company/undertaking

## 1.1. Product identifier

Code: AG050101  
Product name: SILCOR 501  
UFI: 4AA0-P0GP-H00A-1Q8N

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

Intended use: Silver plating solution ready to use (cyanides free)

Identified Uses	Industrial	Professional	Consumer
use	ERC: 2, 5, 8c. PROC: 4, 5. PC: 14. LCS: IS.	-	-

## 1.3. Details of the supplier of the safety data sheet

Name: BERKEM S.R.L.  
Full address: Via Della Provvidenza 63  
District and Country: 35030 Rubano (Padova)  
Italy  
Tel. +390498978072  
Fax +39049635018  
e-mail address of the competent person responsible for the Safety Data Sheet: quality@berkem.it

## 1.4. Emergency telephone number

For urgent inquiries refer to:

- MILANO: CAV Ospedale Niguarda Ca'Granda - Telefono (+39) 02 66101029
- PAVIA: CAV IRCCS Fondazione Maugeri - Telefono (+39) 0382 24444
- BERGAMO: CAV Ospedali Riuniti - Telefono (+39) 800 883300
- FIRENZA: CAV Ospedale Careggi - Telefono (+39) 055 794819
- ROMA: CAV Policlinico Gemelli - Telefono (+39) 06 3054343
- ROMA: CAV Policlinico Umberto - Telefono (+39) 06 49978000
- NAPOLI: CAV Ospedale Cardarelli - Telefono (+39) 081 7472870
- VERONA: CAV Ospedale Borgo Trento - Telefono (+39) 800 011058

## SECTION 2. Hazards identification

## 2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2020/878.

Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

## Hazard classification and indication:

Reproductive toxicity, category 1B	H360D	May damage the unborn child.
Skin corrosion, category 1A	H314	Causes severe skin burns and eye damage.
Serious eye damage, category 1	H318	Causes serious eye damage.
Hazardous to the aquatic environment, acute toxicity, category 1	H400	Very toxic to aquatic life.
Hazardous to the aquatic environment, chronic toxicity, category 2	H411	Toxic to aquatic life with long lasting effects.

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## SECTION 2. Hazards identification ... / &gt;&gt;

## 2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:



Signal words: Danger

Hazard statements:

**H360D** May damage the unborn child.  
**H314** Causes severe skin burns and eye damage.  
**H400** Very toxic to aquatic life.  
**H411** Toxic to aquatic life with long lasting effects.  
Restricted to professional users.

Precautionary statements:

**P260** Do not breathe dust / fume / gas / mist / vapours / spray.  
**P201** Obtain special instructions before use.  
**P305+P351+P338** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
**P303+P361+P353** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].  
**P280** Wear protective gloves/ protective clothing / eye protection / face protection.  
**P310** Immediately call a POISON CENTER (ref. section 1.4) or immediately call a doctor.

**Contains:** silver oxide  
Potassium hydroxide

The product is classified both in acute and long-term aquatic hazard categories: it is possible to use only hazard statement H410 on the label.

## 2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage  $\geq$  than 0,1%.

The product does not contain substances with endocrine disrupting properties in concentration  $\geq$  0.1%.

## SECTION 3. Composition/information on ingredients

## 3.2. Mixtures

Contains:

Identification		x = Conc. %	Classification (EC) 1272/2008 (CLP)
<b>Potassium hydroxide</b>			
INDEX	019-002-00-8	5 ≤ x < 10	Met. Corr. 1 H290, Acute Tox. 4 H302, Skin Corr. 1A H314, Eye Dam. 1 H318 Skin Corr. 1B H314: ≥ 2% - < 5%, Skin Corr. 1C H314: ≥ 2% - < 5%, Skin Irrit. 2 H315: ≥ 0,5% - < 2%, Eye Dam. 1 H318: ≥ 2%, Eye Irrit. 2 H319: ≥ 0,5% - < 2% ATE Oral: 500 mg/kg
EC	215-181-3		
CAS	1310-58-3		
REACH Reg.	01-2119487136-33		
<b>Sulphamic acid</b>			
INDEX	016-026-00-0	2,5 ≤ x < 5	Eye Irrit. 2 H319, Skin Irrit. 2 H315, Aquatic Chronic 3 H412
EC	226-218-8		
CAS	5329-14-6		
REACH Reg.	01-2119488633-28		

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## SECTION 3. Composition/information on ingredients

... / &gt;&gt;

## silver oxide

## INDEX

 $1 \leq x < 2,5$ Ox. Sol. 1 H271, Repr. 1B H360D, Eye Dam. 1 H318, Aquatic Acute 1 H400  
M=1000, Aquatic Chronic 1 H410 M=10

EC 243-957-1

CAS 20667-12-3

REACH Reg. 01-2119513370-54

## 2,2-bipyridyl

## INDEX

 $0 < x < 0,15$ 

Acute Tox. 3 H301, Acute Tox. 3 H311

ATE Oral: 100 mg/kg, ATE Dermal: 300 mg/kg

EC 206-674-4

CAS 366-18-7

The full wording of hazard (H) phrases is given in section 16 of the sheet.

## SECTION 4. First aid measures

## 4.1. Description of first aid measures

In case of doubt or in the presence of symptoms contact a doctor and show him this document.

In case of more severe symptoms, ask for immediate medical aid.

EYES: Remove, if present, contact lenses if the situation allows you to do so easily. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. Get medical advice/attention.

SKIN: Take off immediately all contaminated clothing. Wash immediately and thoroughly with running water (and soap if possible). Get medical advice/attention. Avoid further contact with contaminated clothing.

INGESTION: Do not induce vomiting unless explicitly authorised by a doctor. Rinse your mouth with running water. Do not give anything by mouth to an unconscious person. Get medical advice/attention.

INHALATION: Remove victim to fresh air, away from the accident scene. In the event of respiratory symptoms (coughing, wheezing, breathing difficulty, asthma) keep the victim in a comfortable position for breathing. If necessary administer oxygen. If the subject stops breathing, administer artificial respiration. Get medical advice/attention.

Rescuer protection

It is good practice for rescuers lending support to a person who has been exposed to a chemical substance or to a mixture to wear personal protective equipment. The nature of such protection depends on the hazard level of the substance or mixture, on the type of exposure and on the extent of the contamination. In the absence of other more specific indications, use of disposable gloves in the event of possible contact with body fluids is recommended. For the type of PPE suitable for the characteristics of the substance or mixture, see section 8.

## 4.2. Most important symptoms and effects, both acute and delayed

Specific information on symptoms and effects caused by the product are unknown.

DELAYED EFFECTS: Based on the information currently available, there are no known cases of delayed effects following exposure to this product.

## 4.3. Indication of any immediate medical attention and special treatment needed

Immediately call a POISON CENTER (ref. section 1.4) or immediately call a doctor.

Means to have available in the workplace for specific and immediate treatment

Running water for skin and eye wash.

## SECTION 5. Firefighting measures

## 5.1. Extinguishing media

## SUITABLE EXTINGUISHING EQUIPMENT

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

## UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

## 5.2. Special hazards arising from the substance or mixture

## HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Do not breathe combustion products.

## silver oxide

Oxygen, fumes of silver compounds

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**SECTION 5. Firefighting measures** ... / >>

Potassium hydroxide

At high temperatures it can release toxic or corrosive gases.

Sulphamic acid

Nitrogen oxides (NOx), sulfur oxides (SOx), carbon oxides (CO, CO<sub>2</sub>). In the absence of oxygen: ammonia vapors (NH<sub>3</sub>)

**5.3. Advice for firefighters****GENERAL INFORMATION**

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

**SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS**

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

Sulphamic acid

Special protective equipment for fire fighters:

Chemical protective clothing, wear self-contained breathing apparatus.

**SECTION 6. Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

Block the leakage if there is no hazard.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

**6.2. Environmental precautions**

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

**6.3. Methods and material for containment and cleaning up**

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.

Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

**6.4. Reference to other sections**

Any information on personal protection and disposal is given in sections 8 and 13.

**SECTION 7. Handling and storage****7.1. Precautions for safe handling**

Ensure that there is an adequate earthing system for the equipment and personnel. Avoid contact with eyes and skin. Do not breathe powders, vapours or mists. Do not eat, drink or smoke during use. Wash hands after use. Avoid leakage of the product into the environment.

**7.2. Conditions for safe storage, including any incompatibilities**

Store only in the original container. Store in a ventilated and dry place, far away from sources of ignition. Keep containers well sealed. Keep the product in clearly labelled containers. Avoid overheating. Avoid violent blows. Keep containers away from any incompatible materials, see section 10 for details.

Store at temperatures between 10°C and 30°C.

**7.3. Specific end use(s)**

Information not available

## SECTION 8. Exposure controls/personal protection

## 8.1. Control parameters

Regulatory references:

HUN	Magyarország	Az innovációért és technológiáért felelős miniszter 5/2020. (II. 6.) ITM rendelete a kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
GBR	United Kingdom TLV-ACGIH	EH40/2005 Workplace exposure limits (Fourth Edition 2020) ACGIH 2023

## silver oxide

## Threshold Limit Value

Type	Country	TWA/8h mg/m3	ppm	STEL/15min mg/m3	ppm	Remarks / Observations
WEL	GBR	0,01				as Ag

## Predicted no-effect concentration - PNEC

Normal value in fresh water	0,046	µg/L
Normal value in marine water	0,86	µg/L
Normal value for fresh water sediment	438,13	mg/kg/d
Normal value for marine water sediment	438,13	mg/kg/d
Normal value of STP microorganisms	0,025	mg/l
Normal value for the terrestrial compartment	1,05	mg/kg

## Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers		Effects on workers		Chronic systemic
	Acute local	Acute systemic	Chronic local	Chronic systemic	
Oral				0,23 mg/kg bw/d	
Inhalation				0,32 mg/m3	1,3 mg/m3
Skin				0,23 mg/kg bw/d	0,46 mg/kg bw/d

## Potassium hydroxide

## Threshold Limit Value

Type	Country	TWA/8h mg/m3	ppm	STEL/15min mg/m3	ppm	Remarks / Observations
AK	HUN	2		2		
WEL	GBR			2		
TLV-ACGIH				2 (C)		

## Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers		Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
	Acute local	Acute systemic						
Inhalation			1 mg/m3				1 mg/m3	
Skin		HIGH	HIGH		HIGH		HIGH	

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## SECTION 8. Exposure controls/personal protection ... / &gt;&gt;

## Sulphamic acid

## Predicted no-effect concentration - PNEC

Normal value in fresh water	1,8	mg/l
Normal value in marine water	0,18	mg/l
Normal value for fresh water sediment	8,36	mg/kg/d
Normal value for marine water sediment	0,84	mg/kg/d
Normal value for water, intermittent release	0,48	mg/l
Normal value of STP microorganisms	20	mg/l
Normal value for the terrestrial compartment	5	mg/kg/d

## Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				5 mg/kg bw/d				
Inhalation	LOW	LOW	LOW	17,4 mg/m3	LOW	LOW	LOW	70,5 mg/m3
Skin	LOW	LOW	LOW	5 mg/kg bw/d	LOW	LOW	LOW	10 mg/kg bw/d

## Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified ; LOW = low hazard ; MED = medium hazard ; HIGH = high hazard.

## 8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

## HAND PROTECTION

Protect hands with category III work gloves.

The following should be considered when choosing work glove material (see standard EN 374): compatibility, degradation, permeability time.

The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

Protect your hands with gloves of the following type:

Material: Nitrile rubber (NBR)

The indicated material is a possible choice; other materials can be adequate, depending on the specifications indicated by the manufacturer.

Thickness: 0,11 mm

Glove thickness must be selected based on the minimum required breakthrough time.

Breakthrough time: 480 min

Glove resistance depends on various elements, such as temperature and other environmental factors.

Material: Nitrile rubber (NBR)

In the case of mixtures, work glove resistance to chemical agents must be verified before use, as it is not predictable. Gloves have a wear time that depends on use type and duration.

Thickness: 0,4 mm

Breakthrough time: 480 min

Glove resistance depends on various elements, such as temperature and other environmental factors.

## SKIN PROTECTION

Wear category III professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

## EYE PROTECTION

Wear a hood visor or protective visor combined with airtight goggles (see standard EN ISO 16321).

## RESPIRATORY PROTECTION

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. Use a mask with a type B filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387).

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

## ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

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## SECTION 9. Physical and chemical properties

## 9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	liquid	Temperature: 25 °C
Colour	light blue	Temperature: 25 °C
Odour	odourless	
Melting point / freezing point	< 0 °C	
Initial boiling point	> 100 °C	
Flammability	not flammable	
Lower explosive limit	not applicable	
Upper explosive limit	not applicable	
Flash point	not applicable	
Auto-ignition temperature	not applicable	
Decomposition temperature	not determined	
pH	10,0-11,0	Temperature: 25 °C
Kinematic viscosity	not determined	
Solubility	soluble in water	
Partition coefficient: n-octanol/water	not determined	
Vapour pressure	not determined	
Density and/or relative density	1,095-1,105 g/cm3	Temperature: 25 °C
Relative vapour density	not determined	
Particle characteristics	not applicable	

## 9.2. Other information

## 9.2.1. Information with regard to physical hazard classes

Information not available

## 9.2.2. Other safety characteristics

Information not available

## SECTION 10. Stability and reactivity

## 10.1. Reactivity

Potassium hydroxide

May develop: heat.May corrode: metals.

Sulphamic acid

Decomposes at 205°C/401°F.

## 10.2. Chemical stability

Potassium hydroxide

Stable in normal conditions of use and storage.

Sulphamic acid

In aqueous solution it is very acidic and hydrolyses slowly forming sulphate and bisulphate

## 10.3. Possibility of hazardous reactions

The product may react violently with water.

silver oxide

Risk of explosion on contact with: ammonia,aluminium,sodium,alcohols,Nitroalcans,carbon monoxide.bromine trifluoride,hydrazine.

Potassium hydroxide

Develops hydrogen on contact with: metals.Develops heat on contact with: strong acids.Reacts violently with: water.

Sulphamic acid

Risk of explosion on contact with: chlorine.Reacts violently with: nitrates,metal nitrites.

Reacts violently developing heat on contact with: alkalis.

## 10.4. Conditions to avoid

Avoid overheating. Prevent moisture or water from penetrating inside the containers.

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## SECTION 10. Stability and reactivity ... / &gt;&gt;

silver oxide

Avoid exposure to: light, sources of heat.

Potassium hydroxide

Avoid exposure to: sources of heat. Keep away from: oxidising agents, acids, flammable substances, halogens, organic substances. Keep away from: lead, aluminium, copper, tin, sulphur, bronze. Absorbs atmospheric CO<sub>2</sub>.

Unstable on exposure to air. Freezing.

Sulphamic acid

Avoid exposure to: heat.

## 10.5. Incompatible materials

silver oxide

May react dangerously if exposed to: magnesium, dichloromethylsilane, phosphorus, selenium, sulfides.

2,2-bipyridyl

Incompatible with: strong oxidising agents.

Potassium hydroxide

Avoid contact with: Ether, organic substances, aluminium, copper, tin, zinc.

Sulphamic acid

Incompatible with: chlorine, nitric acid, nitrates, sodium nitrite, potassium nitrites.

Keep away from: alkalis, oxidising substances.

## 10.6. Hazardous decomposition products

silver oxide

May develop: oxygen, Fumes of silver compounds.

2,2-bipyridyl

May develop: carbon oxides, nitric oxide.

Potassium hydroxide

May develop: flammable gases.

Sulphamic acid

May develop: sulphur oxides, nitric oxide.

## SECTION 11. Toxicological information

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

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Information not available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation) of the mixture:

Not classified (no significant component)

ATE (Oral) of the mixture:

&gt;2000 mg/kg

ATE (Dermal) of the mixture:

&gt;2000 mg/kg

silver oxide

LD50 (Oral):

2820 mg/kg Rats

2,2-bipyridyl

LD50 (Dermal):

938 mg/kg Rabbits

ATE (Dermal):

300 mg/kg estimate from table 3.1.2 of Annex I of the CLP  
(figure used for calculation of the acute toxicity estimate of the mixture)

LD50 (Oral):

100 mg/kg Rats

ATE (Oral):

100 mg/kg estimate from table 3.1.2 of Annex I of the CLP  
(figure used for calculation of the acute toxicity estimate of the mixture)



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## SECTION 11. Toxicological information ... / &gt;&gt;

Potassium hydroxide  
LD50 (Oral): 333 mg/kg Rats  
ATE (Oral): 500 mg/kg estimate from table 3.1.2 of Annex I of the CLP  
(figure used for calculation of the acute toxicity estimate of the mixture)

Sulphamic acid  
LD50 (Dermal): > 2000 mg/kg Rats  
LD50 (Oral): 2065 mg/kg Rats

SKIN CORROSION / IRRITATION

Corrosive for the skin

Potassium hydroxide  
Test method: OECD 404 guideline  
Species: Rabbit  
Exposure time: 4h  
Result: Corrosive

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

Potassium hydroxide  
Test method: OECD 405 guideline  
Species: Rabbit  
Exposure time: 4h  
Result: Corrosive

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

Potassium hydroxide  
Test Method: Intradermal Landsteiner & Jacobs Method  
Species: Guinea pig  
Result: Non Sensitizing

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

Potassium hydroxide  
Test method: Bacterial reverse mutation assay (e.g Ames test)  
Metabolic activation: With or without  
Result: Negative

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

May damage the unborn child

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

**11.2. Information on other hazards**

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine

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disruptors with human health effects under evaluation.

**SECTION 12. Ecological information**

This product is dangerous for the environment and highly toxic for aquatic organisms.

This product is dangerous for the environment and is toxic for aquatic organisms. In the long term, it has negative effects on the aquatic environment.

**12.1. Toxicity**

silver oxide	
LC50 - for Fish	0,0012 mg/l/96h Pimephales promelas/ fresh water
EC50 - for Crustacea	0,00022 mg/l/48h Daphnia magna
Chronic NOEC for Fish	0,46 µg/L Oncorhynchus mykiss - Ref. Ionic Silver
Chronic NOEC for Algae / Aquatic Plants	0,0012 mg/l (14d) Champia parvula algae/ marine water

Potassium hydroxide	
LC50 - for Fish	> 50 mg/l/96h
EC50 - for Crustacea	> 30 mg/l/48h Ref Sodium Hydroxide (NaOH)
Chronic NOEC for Fish	25 mg/l Ref Sodium Hydroxide (NaOH)

Sulphamic acid	
LC50 - for Fish	70,3 mg/l/96h Pimephales promelas
EC50 - for Crustacea	71,6 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	48 mg/l/72h Desmodesmus subspicatus
Chronic NOEC for Fish	> 60 mg/l Danio Rerio
Chronic NOEC for Crustacea	19 mg/l Daphnia magna
Chronic NOEC for Algae / Aquatic Plants	18 mg/l Desmodesmus subspicatus

**12.2. Persistence and degradability**

silver oxide  
Degradability: information not available

Potassium hydroxide	
Solubility in water	> 10000 mg/l
Degradability: information not available	

Sulphamic acid	
Solubility in water	> 10000 mg/l
Degradability: information not available	

**12.3. Bioaccumulative potential**

silver oxide	
BCF	70 Cyprinus carpio - Baudinet al. (1993)

Sulphamic acid	
Partition coefficient: n-octanol/water	-4,34 Log Kow (pH < 2, 20°C)

**12.4. Mobility in soil**

Information not available

**12.5. Results of PBT and vPvB assessment**

Potassium hydroxide  
According to Annex XIII of regulation (EC) 1907/2006 a PBT and vPvB assessment shall not be conducted for inorganic substances.

On the basis of available data, the product does not contain any PBT or vPvB in percentage  $\geq$  than 0,1%.

**12.6. Endocrine disrupting properties**

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with environmental effects under evaluation.

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## SECTION 12. Ecological information ... / &gt;&gt;

## 12.7. Other adverse effects

Information not available

## SECTION 13. Disposal considerations

## 13.1. Waste treatment methods

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

Waste transportation may be subject to ADR restrictions.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

## SECTION 14. Transport information

## 14.1. UN number or ID number

ADR / RID, IMDG, IATA: UN 1760

## 14.2. UN proper shipping name

ADR / RID: CORROSIVE LIQUID, N.O.S. (Potassium hydroxide)  
IMDG: CORROSIVE LIQUID, N.O.S. (Potassium hydroxide, silver oxide)  
IATA: CORROSIVE LIQUID, N.O.S. (Potassium hydroxide)

## 14.3. Transport hazard class(es)

ADR / RID: Class: 8 Label: 8

IMDG: Class: 8 Label: 8

IATA: Class: 8 Label: 8



## 14.4. Packing group

ADR / RID, IMDG, IATA: II

## 14.5. Environmental hazards

ADR / RID: NO  
IMDG: not marine pollutant  
IATA: NO

## 14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 80 Special provision: 274	Limited Quantities: 1 L	Tunnel restriction code: (E)
IMDG:	EMS: F-A, S-B	Limited Quantities: 1 L	
IATA:	Cargo: Passengers: Special provision:	Maximum quantity: 30 L Maximum quantity: 1 L A3, A803	Packaging instructions: 855 Packaging instructions: 851

## 14.7. Maritime transport in bulk according to IMO instruments

Information not relevant

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## SECTION 15. Regulatory information

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

Seveso Category - Directive 2012/18/EU:

E1

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006Product

Point 3

Contained substance

Point 75

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors  
not applicableSubstances in Candidate List (Art. 59 REACH)On the basis of available data, the product does not contain any SVHC in percentage  $\geq$  than 0,1%.Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

## 15.2. Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

## SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

<b>Ox. Sol. 1</b>	Oxidising solid, category 1
<b>Met. Corr. 1</b>	Substance or mixture corrosive to metals, category 1
<b>Repr. 1B</b>	Reproductive toxicity, category 1B
<b>Acute Tox. 3</b>	Acute toxicity, category 3
<b>Acute Tox. 4</b>	Acute toxicity, category 4
<b>Skin Corr. 1A</b>	Skin corrosion, category 1A
<b>Skin Corr. 1B</b>	Skin corrosion, category 1B
<b>Skin Corr. 1C</b>	Skin corrosion, category 1C
<b>Eye Dam. 1</b>	Serious eye damage, category 1
<b>Eye Irrit. 2 Skin</b>	Eye irritation, category 2
<b>Irrit. 2</b>	Skin irritation, category 2
<b>Aquatic Acute 1</b>	Hazardous to the aquatic environment, acute toxicity, category 1
<b>Aquatic Chronic 1</b>	Hazardous to the aquatic environment, chronic toxicity, category 1
<b>Aquatic Chronic 2</b>	Hazardous to the aquatic environment, chronic toxicity, category 2
<b>Aquatic Chronic 3</b>	Hazardous to the aquatic environment, chronic toxicity, category 3
<b>H271</b>	May cause fire or explosion; strong oxidiser.
<b>H290</b>	May be corrosive to metals.
<b>H360D</b>	May damage the unborn child.
<b>H301</b>	Toxic if swallowed.
<b>H311</b>	Toxic in contact with skin.
<b>H302</b>	Harmful if swallowed.
<b>H314</b>	Causes severe skin burns and eye damage.
<b>H318</b>	Causes serious eye damage.
<b>H319</b>	Causes serious eye irritation.
<b>H315</b>	Causes skin irritation.

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## SECTION 16. Other information ... / &gt;&gt;

<b>H400</b>	Very toxic to aquatic life.
<b>H410</b>	Very toxic to aquatic life with long lasting effects.
<b>H411</b>	Toxic to aquatic life with long lasting effects.
<b>H412</b>	Harmful to aquatic life with long lasting effects.

Use descriptor system:

<b>ERC</b>	<b>2</b>	Formulation into mixture
<b>ERC</b>	<b>5</b>	Use at industrial site leading to inclusion into/onto article
<b>ERC</b>	<b>8c</b>	Widespread use leading to inclusion into/onto article (indoor)
<b>LCS</b>	<b>IS</b>	Use at industrial sites
<b>PC</b>	<b>14</b>	Metal surface treatment products
<b>PROC</b>	<b>4</b>	Chemical production where opportunity for exposure arises
<b>PROC</b>	<b>5</b>	Mixing or blending in batch processes

## LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE: Identifier in ESIS (European archive of existing substances)
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent, bioaccumulative and toxic
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PMT: Persistent, mobile and toxic
- PNEC: Predicted no effect concentration
- REACH: Regulation (EC) 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very persistent and very bioaccumulative
- vPvM: Very persistent and very mobile
- WGK: Water hazard classes (German).

## GENERAL BIBLIOGRAPHY

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 2020/878 (II Annex of REACH Regulation)
4. Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2019/521 (XII Atp. CLP)
16. Delegated Regulation (UE) 2018/1480 (XIII Atp. CLP)
17. Regulation (EU) 2019/1148
18. Delegated Regulation (UE) 2020/217 (XIV Atp. CLP)
19. Delegated Regulation (UE) 2020/1182 (XV Atp. CLP)
20. Delegated Regulation (UE) 2021/643 (XVI Atp. CLP)
21. Delegated Regulation (UE) 2021/849 (XVII Atp. CLP)

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## SECTION 16. Other information ... / &gt;&gt;

- 22. Delegated Regulation (UE) 2022/692 (XVIII Atp. CLP)
- 23. Delegated Regulation (UE) 2023/707
- 24. Delegated Regulation (UE) 2023/1434 (XIX Atp. CLP)
- 24. Delegated Regulation (UE) 2023/1435 (XX Atp. CLP)

- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

## Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

## CALCULATION METHODS FOR CLASSIFICATION

Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.

Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.

Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.

Changes to previous review:

The following sections were modified:

02 / 03 / 04 / 05 / 07 / 08 / 10 / 11 / 12 / 14 / 16.