

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 14.11.2023

Version number 5 (replaces version 4)

Revision: 14.11.2023

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

· **1.1 Product identifier**

· **Product name: KS520 - 0.1N Silver Nitrate**

· **Catalog number:** 56Z052098, 56L052095, 56U052095, 56L052098, 56U052098, 56L052097, 56U052097

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

· **Application of the substance / the preparation:** Reagent for water analysis

· **1.3 Details of the supplier of the safety data sheet**

· **Supplier:**

Tintometer GmbH
Schleefstraße 8-12
44287 Dortmund
Made in Germany
www.lovibond.com

phone: +49 (0)231 94510-0
e-mail: sales@lovibond.com

The Tintometer Limited
Lovibond® House
Sun Rise Way
Amesbury
Wiltshire SP4 7GR
United Kingdom

phone : +44 1980 664800
e-mail: SDS@lovibond.uk

· **Informing department:**

e-mail: sds@lovibond.com
Product Safety Department

· **1.4 Emergency telephone number:**

+44 1235 239670
Languages: English

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**



GHS05 corrosion

Met. Corr.1 H290 May be corrosive to metals.



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the GB CLP regulation.

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Hazard pictograms


GHS05 GHS09

Signal word Warning

Hazard statements

- H290 May be corrosive to metals.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

- P280 Wear protective gloves / eye protection.
 P273 Avoid release to the environment.
 P302+P352 IF ON SKIN: Wash with plenty of soap and water.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P332+P313 If skin irritation occurs: Get medical advice/attention.
 P337+P313 If eye irritation persists: Get medical advice/attention.

2.3 Other hazards No further relevant information available.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

Determination of endocrine-disrupting properties

The product does not contain substances with endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description: aqueous solution

Dangerous components:

CAS: 7761-88-8	silver nitrate	1-≤2.5%
EINECS: 231-853-9	Ox. Sol. 2, H272; Skin Corr. 1B, H314; Aquatic Acute 1, H400 (M=1000); Aquatic Chronic 1, H410 (M=100); Acute Tox. 4, H302	
Index No: 047-001-00-2		
Reg.nr.: 01-2119513705-43-XXXX		

Additional information For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information Instantly remove any clothing soiled by the product.

After inhalation Supply fresh air; consult doctor in case of symptoms.

After skin contact

Instantly wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

After eye contact Rinse opened eye for several minutes (at least 15 min) under running water. Then consult doctor.

After swallowing

Rinse out mouth and then drink 1-2 glasses of water.

In case of persistent symptoms consult doctor.

4.2 Most important symptoms and effects, both acute and delayed:

irritations

after swallowing of large amounts:

gastric or intestinal trouble

methaemoglobinaemia

CNS disorders

cardiovascular disorders

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 · **4.3 Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
 - **5.2 Special hazards arising from the substance or mixture**
The product is not combustible.
Formation of toxic gases is possible during heating or in case of fire.
Can be released in case of fire:
Nitrogen oxides (NO_x)
 - **5.3 Advice for firefighters**
 - **Protective equipment:**
Wear self-contained breathing apparatus.
Wear full protective suit.
 - **Additional information**
Collect contaminated fire fighting water separately. It must not enter drains.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.
-

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
 - **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
 - **Advice for emergency responders:** Protective equipment: see section 8
 - **6.2 Environmental precautions:**
Do not allow product to reach sewage system or water bodies.
Inform respective authorities in case product reaches water or sewage system.
 - **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
Dispose of contaminated material as waste according to item 13.
 - **6.4 Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.
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SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
- **Advice on safe handling:** No special precautions necessary if used correctly.
- **Hygiene measures:**
Avoid contact with the skin.
Avoid contact with the eyes.
Take off immediately all contaminated clothing.
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke when using this product.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and containers:** Store in cool location.
- **Information about storage in one common storage facility:**
Store away from metals.
see chapter 10
- **Further information about storage conditions:**
Protect from heat and direct sunlight.
Store in the dark.
Protect from the effects of light.
Protect from humidity and keep away from water.
- **Recommended storage temperature:** 20°C +/- 5°C

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· **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

· **Components with limit values that require monitoring at the workplace:**

CAS: 7761-88-8 silver nitrate

WEL (Great Britain)	Long-term value: 0.01 mg/m ³ as Ag
IOELV (European Union)	Long-term value: 0.01 mg/m ³ as Ag

· **Regulatory information**

WEL (Great Britain): EH40/2020

IOELV (European Union): (EU) 2019/1831

· **DNELs**

Derived No Effect Level (DNEL)

CAS: 7761-88-8 silver nitrate

Inhalative	DNEL	0.016 mg/m ³ (Worker / long-term /systemic effects)
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· **Recommended monitoring procedures:**

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

· **Additional information:** The lists that were valid during the compilation were used as basis.

· **8.2 Exposure controls**

· **Engineering measures:**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See item 7.

· **Individual protection measures, such as personal protective equipment**

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.

· **Eye/face protection** Safety glasses

· **Hand protection**

Protective gloves.

Preventive skin protection by use of skin-protecting agents is recommended.

After use of gloves apply skin-cleaning agents and skin cosmetics.

· **Material of gloves**

nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.11 mm

· **Penetration time of glove material**

Value for the permeation: Level = 1 (< 10 min)

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Other skin protection (body protection):** Protective work clothing.

· **Breathing equipment:** Use breathing protection only when aerosol or mist is formed.

· **Recommended filter device for short term use:** Filter ABEK

· **Environmental exposure controls** Do not allow product to reach sewage system or water bodies.

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· Physical state	Fluid
· Form:	Solution
· Colour:	Colourless
· Odour:	Odourless
· Odour threshold:	Not applicable.
· Melting point/Freezing point:	Not determined.
· Boiling point or initial boiling point and boiling range	100°C (CAS: 7732-18-5 water)
· Flammability	The product is not combustible.

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· Explosive properties:	Product is not explosive.
· Lower and upper explosion limit	
Lower:	Not applicable.
Upper:	Not applicable.
· Flash point:	Not applicable.
· Auto-ignition temperature:	Not applicable.
· Decomposition temperature:	Not determined.
· pH at 20°C	5
· Kinematic viscosity	Not determined.
· Solubility	
· Water:	Fully miscible
· Partition coefficient n-octanol/water (log value)	Not applicable (mixture).
· Vapour pressure:	Not determined.
· Density and/or relative density	
· Density at 20°C:	1 g/cm ³
· Relative density:	Not determined.
· Relative gas density	Not determined.
· Particle characteristics	Not applicable (liquid).
9.2 Other information	
· Information with regard to physical hazard classes	
· Corrosive to metals	May be corrosive to metals.
· Metals that are corroded by the substance or mixture	Information on incompatible materials can be found in Sections 7 and 10.
· Other safety characteristics	
· Oxidising properties:	none
· Additional information	
· Solids content:	< 5 %
· Solvent content:	
· Organic solvents:	0.0 %
· Water:	> 95 %

SECTION 10: Stability and reactivity

- **10.1 Reactivity** see section 10.3
- **10.2 Chemical stability**
Stable at ambient temperature (room temperature).
sensitivity to light
sensitive to air
- **10.3 Possibility of hazardous reactions**
Corrosive action on metals
Reacts with alcohols
- **10.4 Conditions to avoid**
To avoid thermal decomposition do not overheat.
Exposure to light
- **10.5 Incompatible materials:**
combustible substances
aluminium
steel
- **10.6 Hazardous decomposition products:** see section 5

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.

· LD/LC50 values that are relevant for classification:

CAS: 7761-88-8 silver nitrate

Oral	LD50	1173 mg/kg (rat) (RTECS)
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- **Skin corrosion/irritation** Causes skin irritation.
- **Serious eye damage/irritation** Causes serious eye irritation.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

Additional toxicological information:
CAS: 7761-88-8 silver nitrate

(source: GESTIS)

Main toxic effects:

Acute: Irritant to caustic effect on mucous membranes and skin.

After ingestion of high doses: gastrointestinal complaints, disorders of the cardiovascular system and disorders of the central nervous system.

chronic: silver deposits in the tissues (argyria)

Further information:

Depending on the concentration, dust and solutions have an irritating to highly caustic effect on mucous membranes and skin. 5-50% solutions caused severe eye damage, in some cases permanent corneal opacity.

- **11.2 Information on other hazards**
- **Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.

SECTION 12: Ecological information

12.1 Toxicity
Aquatic toxicity:
CAS: 7761-88-8 silver nitrate

LC50	0.00022 mg/l/48h (Daphnia magna) (OECD 202) (Merck, Ag-Ion)
EC10	0.0021 mg/l (Daphnia magna) (21) (Registrant, ECHA)
NOEC	0.00037 mg/l (fathhead minnow) (OECD 210) (Merck)
LC50	0.0012 mg/l/96h (fathhead minnow) (US-EPA) (Merck, Ag-Ion)

12.2 Persistence and degradability .
Other information:

Mixture of inorganic compounds.

Methods for the determination of biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential No further relevant information available.

12.4 Mobility in soil No further relevant information available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

12.6 Endocrine disrupting properties The product does not contain substances with endocrine disrupting properties.

12.7 Other adverse effects Avoid transfer into the environment.

Water hazard:

Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into soil.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Recommendation

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

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Hand over to disposers of hazardous waste.

European waste catalogue	
16 05 07*	discarded inorganic chemicals consisting of or containing hazardous substances

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

· 14.1 UN number or ID number · ADR, IMDG, IATA	UN1760
· 14.2 UN proper shipping name · ADR · IMDG · IATA	1760 CORROSIVE LIQUID, N.O.S. (SILVER NITRATE), ENVIRONMENTALLY HAZARDOUS CORROSIVE LIQUID, N.O.S. (SILVER NITRATE), MARINE POLLUTANT CORROSIVE LIQUID, N.O.S. (SILVER NITRATE)
· 14.3 Transport hazard class(es) · ADR	
 	
· Class · Label	8 (C9) Corrosive substances. 8
· IMDG	
 	
· Class · Label	8 Corrosive substances. 8
· IATA	
	
· Class · Label	8 Corrosive substances. 8
· 14.4 Packing group · ADR, IMDG, IATA	III
· 14.5 Environmental hazards: · Marine pollutant: · Special marking (ADR):	Yes Symbol (fish and tree) Symbol (fish and tree)
· 14.6 Special precautions for user · Kemler Number: · EMS Number: · Segregation groups · Stowage Category · Stowage Code	Warning: Corrosive substances. 80 F-A,S-B (SGG7) Heavy metals and their salts (including their organometallic compounds) A SW2 Clear of living quarters.
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.

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· Transport/Additional information:	
· ADR	
· Excepted quantities (EQ):	E1
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· Transport category	3
· Tunnel restriction code	E
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

* SECTION 15: Regulatory information

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

 · **Poisons Act UK**

 · **Regulated explosives precursors**

None of the ingredients is listed.

 · **Regulated poisons**

None of the ingredients is listed.

 · **Reportable explosives precursors**

None of the ingredients is listed.

 · **Reportable poisons**

None of the ingredients is listed.

 · **Regulation (EU) 2019/1148 on the marketing and use of explosives precursors** not regulated

 · **Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals (PIC)**

None of the ingredients is listed.

 · **Regulation (EC) No 1334/2000 setting up a Community regime for the control of exports of dual-use items and technology:**

None of the ingredients is listed.

 · **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

 · **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

 · **Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:**

None of the ingredients is listed.

 · **REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)**

None of the ingredients is listed.

 · **LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)**

None of the ingredients is listed.

 · **Substances of very high concern (SVHC) according to REACH, Article 57**
This product does not contain any substances of very high concern above the legal concentration limit of $\geq 0.1\%$ (w / w).

 · **Substances of very high concern (SVHC) according to UK REACH**
This product does not contain any substances of very high concern above the legal concentration limit of $\geq 0.1\%$ (w / w).

 · **Directive 2012/18/EU (SEVESO III):**

 · **Named dangerous substances - ANNEX I** None of the ingredients is listed.

 · **Seveso category** E1 Hazardous to the Aquatic Environment

 · **Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t

 · **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t

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- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3
 - **Information about limitation of use:** Not required.
 - **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.
-

* SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

- **Training hints** Provide adequate information, instruction and training for operators.
- **Relevant phrases**
 - H272 May intensify fire; oxidiser.
 - H302 Harmful if swallowed.
 - H314 Causes severe skin burns and eye damage.
 - H400 Very toxic to aquatic life.
 - H410 Very toxic to aquatic life with long lasting effects.
- **Abbreviations and acronyms:**
 - EC50: effective concentration, 50 percent (in vivo)
 - STOT: specific target organ toxicity
 - SE: single exposure
 - RE: repeated exposure
 - EC50: half maximal effective concentration
 - IC50: half maximal inhibitory concentration
 - NOEL or NOEC: No Observed Effect Level or Concentration
 - ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
 - RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 - IMDG: International Maritime Code for Dangerous Goods
 - IATA: International Air Transport Association
 - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 - EINECS: European Inventory of Existing Commercial Chemical Substances
 - ELINCS: European List of Notified Chemical Substances
 - CAS: Chemical Abstracts Service (division of the American Chemical Society)
 - DNEL: Derived No-Effect Level (UK REACH)
 - LC50: Lethal concentration, 50 percent
 - LD50: Lethal dose, 50 percent
 - PBT: Persistent, Bioaccumulative and Toxic
 - SVHC: Substances of Very High Concern
 - vPvB: very Persistent and very Bioaccumulative
 - Ox. Sol. 2: Oxidizing solids – Category 2
 - Met. Corr. 1: Corrosive to metals – Category 1
 - Acute Tox. 4: Acute toxicity – Category 4
 - Skin Corr. 1B: Skin corrosion/irritation – Category 1B
 - Skin Irrit. 2: Skin corrosion/irritation – Category 2
 - Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
 - Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
 - Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
- **Sources**
 - Data arise from safety data sheets, reference works and literature.
 - RTECS (Registry of Toxic Effects of Chemical Substances)
 - GESTIS- Stoffdatenbank (Substance Database, Germany)
 - ECHA: European Chemicals Agency <http://echa.europa.eu>
- *** Data compared to the previous version altered.**