

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

Printing date 29.08.2018

Version number 2

Revision: 29.08.2018

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

- **Trade name:** Silbernitrat-Loesung 20 % Silber, 31,75 % Silber
Silver nitrate solution 20% Silver, 31, 75 % Silver
- **Article number:** 4021210102, 4021410102
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Initial product for chemical reactions
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Wieland Edelmetalle GmbH
Schwenninger Str. 13
75179 Pforzheim
Telefon +49 (07231)-1393-0, Telefax +49 (07231)-1393-100
- **Further information obtainable from:**
Wieland Edelmetalle GmbH
www.wieland-edelmetalle.de
msds@wieland-edelmetalle.de
- **1.4 Emergency telephone number:**
Emergency CONTACT (24-Hour-Number):GBK GmbH +49 (0)6132-84463

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.
Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.
Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS05 GHS09

- **Signal word** Danger
- **Hazard-determining components of labelling:**
silver nitrate (<250 µm)
- **Hazard statements**
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H410 Very toxic to aquatic life with long lasting effects.

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Precautionary statements

- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P405 Store locked up.
- P406 Store in corrosive resistant container with a resistant inner liner.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards

Results of PBT and vPvB assessment




- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

3.2 Chemical characterisation: Mixtures

- **Description:** Mixture of substances listed below with nonhazardous additions.

Dangerous components:

CAS: 7761-88-8	silver nitrate (<250 µm)	25-50%
EINECS: 231-853-9	 Ox. Sol. 2, H272;  Met. Corr.1, H290; Skin Corr. 1B, H314;  Aquatic Acute 1, H400; Aquatic Chronic 1, H410	

- **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:** Immediately remove any clothing soiled by the product.
- **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **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:

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

5.2 Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in case of fire.
Nitrogen oxides (NO_x)

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- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
- **Information about storage in one common storage facility:**
Do not store together with alkalis (caustic solutions).
- **Further information about storage conditions:**
Protect from exposure to the light.
Keep receptacle tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· DNELs

7761-88-8 silver nitrate (<250 µm)

Inhalative	DNEL	0.016 mg/kg (-)
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· PNECs

7761-88-8 silver nitrate (<250 µm)

PNEC _{freshwater}	0.04 µg/l (-) (Soluble Ag)
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PNEC _{marine}	0.86 µg/l (-) (Soluble Ag)
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PNEC _{sediment freshw.}	438 mg/kg dwt (-) (Ag)
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PNECsediment marine	438 mg/kg dwt (-) (Ag)
PNECsoil	0.794 mg/kg wwt (-) (Ag)
PNECSTP	0.025 mg/l (-) (Soluble Ag)

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

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing
- Wash hands before breaks and at the end of work.
- Avoid contact with the eyes and skin.

· **Respiratory protection:** Not necessary if room is well-ventilated.

· **Protection of hands:**



Protective gloves

· **Material of gloves**

- Chloroprene rubber, CR
- Natural rubber, NR
- Butyl rubber, BR
- Fluorocarbon rubber (Viton)

· **Penetration time of glove material**

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

· **Eye protection:**



Tightly sealed goggles

· **Body protection:** Protective work clothing

SECTION 9: Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form:	Fluid
Colour:	Colourless
Odour:	Characteristic

· **pH-value at 20 °C:** 1

· **Change in condition**

Initial boiling point and boiling range: 110 °C

· **Flash point:** Not applicable.

· **Auto-ignition temperature:** Product is not selfigniting.

· **Explosive properties:** Product does not present an explosion hazard.

· **Vapour pressure at 20 °C:** 23 hPa

· **Density at 20 °C:** 1.33 g/cm³

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- | | |
|--|--|
| · Solubility in / Miscibility with water: | Fully miscible. |
| · Solvent content: | |
| Organic solvents: | 0.0 % |
| Water: | 69.0 % |
| · 9.2 Other information | No further relevant information available. |

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **10.3 Possibility of hazardous reactions** Corrosive action on metals.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** Nitrogen oxides

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

· LD/LC50 values relevant for classification:

7761-88-8 silver nitrate (<250 µm)

Oral	LD50	>2,000 mg/kg (rat)
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- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes severe skin burns and eye damage.
- **Serious eye damage/irritation**
Causes serious eye damage.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

· Repeated dose toxicity

7761-88-8 silver nitrate (<250 µm)

Oral	Repeat dose tox.	1.5 mg/kg bw/d (rat) (silver nitrateNOAELcorr)
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- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **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-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

7761-88-8 silver nitrate (<250 µm)

EC10	0.19 µg/l (217d) (Salmo trutta (brown trout)) (Silver nitrate)
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EC10	0.17 µg/l (196d) (Onchorhynchus mykiss (rainbow trout)) (Silver nitrate)
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EC10	0.39 µg/l (32d) (Pimephales promelas (fathead minnow)) (Silver nitrate)
EC10	10.33 µg/l (7d) (Lemna paucisostata (aquatic plants)) (Silver nitrate)
EC10	0.54 µg/l (24h) (Chlamydomonas reinhardtii (algae)) (Silver nitrate)
	0.41 µg/l (24h) (Pseudokirchneriella subcapitata (algae)) (Silver nitrate)
EC10	1.48 µg/l (20d) (Isonychia bicolour (Mahogany Duns)) (Silver nitrate)
EC10	1.68 µg/l (21d) (Corbicula fluminea (freshwater clam)) (Silver nitrate)
	2.14 µg/l (21d) (Daphnia magna (water flea)) (Silver nitrate)
EC10	0.45 µg/l (15d) (Nostoc Muscorum (algae)) (Silver chloride)
NOEC	130 µg/l (28d) (Menidia beryllina(neotropical silversid)) (Silver nitrate)
NOEC	1.2 µg/l (14d) (Champia parvula (algae)) (Silver nitrate)
	1 µg/l (14d) (Stenonema modestum (Mayfly)) (Silver nitrate)
NOEC	8.6 µg/l (30d) (Arbacia punctulata (sea urchin)) (Silver nitrate)
NOEC	1 µg/l (7d) (Ceriodaphnia reticulata (water flea)) (Silver nitrate)
	7 µg/l (7d) (lem) (Silver nitrate)

· **12.2 Persistence and degradability** No further relevant information available.

· **12.3 Bioaccumulative potential**

7761-88-8 silver nitrate (<250 µm)

Bioaccumulation 70 (Cyprinus carpio) (Test material: silver cyanide)

· **12.4 Mobility in soil** No further relevant information available.

· **Ecotoxicological effects:**

· **Remark:** Toxic for fish

· **Additional ecological information:**

· **General notes:**

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

Water danger class 3 (German Regulation) (Self-assessment): extremely hazardous for water

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

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

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

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation**

Must be specially treated adhering to official regulations.

Contact manufacturer for recycling information.

· **European waste catalogue**

06 00 00 WASTES FROM INORGANIC CHEMICAL PROCESSES

06 01 00 wastes from the manufacture, formulation, supply and use (MFSU) of acids

06 01 05* nitric acid and nitrous acid

· **Uncleaned packaging:**

· **Recommendation:**

Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

Packagings that may not be cleansed are to be disposed of in the same manner as the product.

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· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

· **14.1 UN-Number**
 · **ADR, IMDG, IATA**

3264

· **14.2 UN proper shipping name**
 · **ADR**

3264 CORROSIVE LIQUID, ACIDIC, INORGANIC,
 N.O.S. (SILVER NITRATE)
 · **IMDG, IATA** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
 (SILVER NITRATE)

· **14.3 Transport hazard class(es)**

· **ADR**



· **Class**
 · **Label**

8 (C 1) Corrosive substances.
 8

· **IMDG**



· **Class**
 · **Label**

8 Corrosive substances.
 8

· **IATA**



· **Class**
 · **Label**

8 Corrosive substances.
 8

· **14.4 Packing group**
 · **ADR, IMDG, IATA**

II

· **14.5 Environmental hazards:**

· **Marine pollutant:**

No
 Symbol (fish and tree)

· **Special marking (ADR):**

Symbol (fish and tree)

· **14.6 Special precautions for user**

Warning: Corrosive substances.

· **Danger code (Kemler):**

80

· **EMS Number:**

F-A,S-B

· **Segregation groups**

Acids

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

Not applicable.

· **Transport/Additional information:**

· **ADR**

· **Limited quantities (LQ)**

1L

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· Transport category	2
· Tunnel restriction code	E
· UN "Model Regulation":	UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., 8, II

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **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
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3
- **National regulations:**
- **Waterhazard class:** Water danger class 3 (Self-assessment): extremely hazardous for water.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**
H272 May intensify fire; oxidiser.
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
- **Department issuing SDS:** Abteilung Umweltschutz
- **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
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 (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Ox. Sol. 2: Oxidizing solids – Category 2
Met. Corr. 1: Corrosive to metals – Category 1
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
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
- *** Data compared to the previous version altered.**