

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

revised on: 20.12.2021

Version number 9

Creation Date: 04.11.2015

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

#### · 1.1 Product identifier

· **Trade name:** Silver nitrate solution 0.1 mol / l

· **Article number:** 881

· **CAS Number:**

7761-88-8

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· **Registration number** This product is a mixture. REACH registration numbers see section 3.

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

##### · **Sector of Use**

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

SU9 Manufacture of fine chemicals

SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

SU24 Scientific research and development

##### · **Product category**

PC19 Intermediate

PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents

PC21 Laboratory chemicals

PC29 Pharmaceuticals

PC39 Cosmetics, personal care products

PC40 Extraction agents

##### · **Process category**

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC15 Use as laboratory reagent

##### · **Environmental release category**

ERC1 Manufacture of the substance

ERC2 Formulation into mixture

ERC3 Formulation into solid matrix

ERC6a Use of intermediate

##### · **Application of the substance / the mixture**

Commercial use

Laboratory chemicals

Reagent for analysis

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

##### · **Manufacturer/Supplier:**

Th. Geyer GmbH & Co. KG

Dornierstr. 4 – 6

D-71272 Renningen

Tel.: +49(0)7159-1637-0, Fax:+49 (0)7159/18417

www.thgeyer.de

sicherheitsdatenblaetter@thgeyer.de

· **Further information obtainable from:** Product management department

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**1.4 Emergency telephone number:**

National Poisons Information Service  
 (Birmingham Centre)  
 City Hospital  
 Dudley Road  
 Birmingham B18 7QH  
 Tel.:Emergency: (00 44) 87 06 00 62 66

### SECTION 2: Hazards identification

**2.1 Classification of the substance or mixture**
**Classification according to Regulation (EC) No 1272/2008**


GHS09 environment

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 CLP regulation.

**Hazard pictograms**


GHS07 GHS09

**Signal word** Warning

**Hazard statements**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H410 Very toxic to aquatic life with long lasting effects.

**Precautionary statements**

P273 Avoid release to the environment.

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

P332+P313 If skin irritation occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P391 Collect spillage.

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

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**Dangerous components:**

CAS: 7761-88-8 EINECS: 231-853-9 Reg.nr.: 01-2119513705-43-XXXX	silver nitrate  Ox. Sol. 2, H272  Skin Corr. 1B, H314  Aquatic Acute 1, H400; Aquatic Chronic 1, H410  Acute Tox. 4, H312	≥1- <2%
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 · **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:**

First aider needs to protect himself.  
 Immediately remove any clothing soiled by the product.

 · **After inhalation:**

Remove person from danger area.  
 Supply fresh air.  
 Seek medical treatment in case of complaints.

 · **After skin contact:**

Flush contaminated skin with soap and plenty of water.  
 After prolonged contact or any signs of skin changes (redness or other signs of inflammation) seek medical attention.  
 take care of a Possibility of inhalation at the same time

 · **After eye contact:**

Protect unharmed eye.  
 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.  
 Consult doctor if feeling unwell.

 · **Information for doctor:** Please observe safety data sheet/label.

 · **4.2 Most important symptoms and effects, both acute and delayed**

Gastric or intestinal disorders  
 Headache  
 Cramp

 · **4.3 Indication of any immediate medical attention and special treatment needed** Symptomatic treatment.

### SECTION 5: Firefighting measures

 · **5.1 Extinguishing media**

 · **Suitable extinguishing agents:**

CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray.  
 Water

Use fire extinguishing methods suitable to surrounding conditions.

 · **For safety reasons unsuitable extinguishing agents:** Water with full jet.

 · **5.2 Special hazards arising from the substance or mixture**

Under certain fire conditions, traces of other toxic gases cannot be excluded.

 · **5.3 Advice for firefighters**

 · **Protective equipment:**

Wear fully protective suit.  
 Wear self-contained respiratory protective device.  
 Do not inhale explosion gases or combustion gases.

 · **Additional information**

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.  
 Prevent fire extinguishing water from contaminating surface water or the ground water system.

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### SECTION 6: Accidental release measures

#### · 6.1 Personal precautions, protective equipment and emergency procedures

- Wear protective clothing.
- Particular danger of slipping on leaked/spilled product.
- Avoid contact with eyes and skin.
- Ensure adequate ventilation.

#### · 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 of the material collected according to regulations.

#### · 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

- Store in cool, dry place in tightly closed receptacles.
- Apply the general protection and hygiene measures for the handling with chemicals.
- Keep away from heat and direct sunlight.

#### · Information about fire - and explosion protection:

- Substance itself does not burn, tuning measures to environment

#### · 7.2 Conditions for safe storage, including any incompatibilities

##### · Storage:

##### · Requirements to be met by storerooms and receptacles:

- Use only receptacles specifically permitted for this substance/product.
- Store only in the original receptacle.

##### · Information about storage in one common storage facility: Not required.

##### · Further information about storage conditions: Protect from exposure to the light.

##### · Storage class: 12

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

### SECTION 8: Exposure controls/personal protection

#### · 8.1 Control parameters

##### · Additional information about design of technical facilities: No further data; see item 7.

##### · 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

- Silver nitrate 7761-88-8 DNEL 0.016 mg/m<sup>3</sup> Human, inhalation Workers (industry) chronic - systemic effects

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

#### · 8.2 Exposure controls

##### · Personal protective equipment:

##### · General protective and hygienic measures: Wash hands before breaks and at the end of work.

##### · Respiratory protection: Not required.

##### · Protection of hands:



Protective gloves

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The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **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.

- **For the permanent contact gloves made of the following materials are suitable:** Nitrile rubber, NBR

- **Eye protection:**



Safety glasses

- **Body protection:**



Protective work clothing (e. g. safety shoes EN ISO 20345, long-sleeved protective working garments).

### SECTION 9: Physical and chemical properties

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

- **General Information**

- **Appearance:**

<b>Form:</b>	Fluid
<b>Colour:</b>	Colourless
<b>Odour:</b>	Odourless

- **pH-value at 20 °C:** ~5

- **Change in condition**

<b>Melting point/freezing point:</b>	0 °C
<b>Initial boiling point and boiling range:</b>	Undetermined.

- **Flash point:** Not applicable.

- **Flammability (solid, gas):** Not applicable.

- **Decomposition temperature:** Not determined.

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

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

- **Explosion limits:**

<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.

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

- **Density at 20 °C:** ~1 g/cm<sup>3</sup>  
Not determined.

- **Relative density** Not determined.

- **Vapour density** Not determined.

- **Evaporation rate** Not determined.

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· <b>Solubility in / Miscibility with water:</b>	Fully miscible.
· <b>Partition coefficient: n-octanol/water:</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic at 20 °C:</b>	0.952 mPas
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Water:</b>	>98.0 %
<b>VOC (EC)</b>	0.00 %
<b>Solids content:</b>	3.0 %
· <b>9.2 Other information</b>	No further relevant information available.

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability** Stable with proper storage and handling.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** Heat, flames and sparks
- **10.5 Incompatible materials:** Avoid contact with other chemicals.
- **10.6 Hazardous decomposition products:**  
In case of fire / burns, development of hazardous combustion gases or vapors possible.

### 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:

##### ATE (Acute Toxicity Estimates)

Dermal	LD50	>100,000 mg/kg (rat)
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##### CAS: 7761-88-8 silver nitrate

Oral	LD50	1,170 mg/kg (rat)
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Dermal	LD50	2,000 mg/kg (rat)
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- **Primary irritant effect:**
- **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.
- **Additional toxicological information:**
- **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.

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### SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability**  
Anorganic product, is not eliminable from water by means of biological cleaning processes.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:**  
Harmful to fish  
Toxic for fish  
Toxic for water fleas  
Toxic for algae
- **Additional ecological information:**
- **General notes:**  
Harmful to aquatic organisms  
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water  
Do not allow product to reach ground water, water course or sewage system.  
Danger to drinking water if even 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**  
Observe local (country-specific) regulations and laws  
This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.  
Chemicals must be disposed of in compliance with the respective national regulations.

#### European waste catalogue

06 00 00	WASTES FROM INORGANIC CHEMICAL PROCESSES
06 03 00	wastes from the MFSU of salts and their solutions and metallic oxides
06 03 13*	solid salts and solutions containing heavy metals
16 00 00	WASTES NOT OTHERWISE SPECIFIED IN THE LIST
16 05 00	gases in pressure containers and discarded chemicals
16 05 07*	discarded inorganic chemicals consisting of or containing hazardous substances
HP14	Ecotoxic

- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

### SECTION 14: Transport information

- **14.1 UN-Number**
- **ADR, IMDG, IATA** UN3082

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<ul style="list-style-type: none"> <li>· 14.2 UN proper shipping name</li> <li>· ADR</li> <li>· IMDG</li> <li>· IATA</li> </ul>	<p>3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (SILVER NITRATE)</p> <p>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (SILVER NITRATE), MARINE POLLUTANT</p> <p>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (SILVER NITRATE)</p>
<ul style="list-style-type: none"> <li>· 14.3 Transport hazard class(es)</li> <li>· ADR</li> </ul> <div style="display: flex; align-items: center; gap: 10px;">   </div> <ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> </ul>	<p>9 (M6) Miscellaneous dangerous substances and articles.</p> <p>9</p>
<ul style="list-style-type: none"> <li>· IMDG, IATA</li> </ul> <div style="display: flex; align-items: center; gap: 10px;">   </div> <ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> </ul>	<p>9 Miscellaneous dangerous substances and articles.</p> <p>9</p>
<ul style="list-style-type: none"> <li>· 14.4 Packing group</li> <li>· ADR, IMDG, IATA</li> </ul>	<p>III</p>
<ul style="list-style-type: none"> <li>· 14.5 Environmental hazards:</li> <li>· Marine pollutant:</li> <li>· Special marking (ADR):</li> <li>· Special marking (IATA):</li> </ul>	<p>Symbol (fish and tree)</p> <p>Symbol (fish and tree)</p> <p>Symbol (fish and tree)</p>
<ul style="list-style-type: none"> <li>· 14.6 Special precautions for user</li> <li>· Hazard identification number (Kemler code):</li> <li>· EMS Number:</li> <li>· Segregation groups</li> <li>· Stowage Category</li> </ul>	<p>Warning: Miscellaneous dangerous substances and articles.</p> <p>90</p> <p>F-A,S-F</p> <p>Heavy metals and their salts (including their organometallic compounds)</p> <p>A</p>
<ul style="list-style-type: none"> <li>· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</li> </ul>	<p>Not applicable.</p>
<ul style="list-style-type: none"> <li>· Transport/Additional information:</li> </ul>	
<ul style="list-style-type: none"> <li>· ADR</li> <li>· Limited quantities (LQ)</li> <li>· Excepted quantities (EQ)</li> <li>· Transport category</li> <li>· Tunnel restriction code</li> </ul>	<p>5L</p> <p>Code: E1</p> <p>Maximum net quantity per inner packaging: 30 ml</p> <p>Maximum net quantity per outer packaging: 1000 ml</p> <p>3</p> <p>(-)</p>
<ul style="list-style-type: none"> <li>· IMDG</li> <li>· Limited quantities (LQ)</li> <li>· Excepted quantities (EQ)</li> </ul>	<p>5L</p> <p>Code: E1</p> <p>Maximum net quantity per inner packaging: 30 ml</p> <p>Maximum net quantity per outer packaging: 1000 ml</p>

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· <b>UN "Model Regulation":</b>	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (SILVER NITRATE), 9, III
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### 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

· <b>DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II</b>
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None of the ingredients is listed.
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- **REGULATION (EU) 2019/1148**

· <b>Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))</b>
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None of the ingredients is listed.
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· <b>Annex II - REPORTABLE EXPLOSIVES PRECURSORS</b>
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None of the ingredients is listed.
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· <b>Regulation (EC) No 273/2004 on drug precursors</b>
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None of the ingredients is listed.
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· <b>Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors</b>
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None of the ingredients is listed.
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- **National regulations:**

- **Information about limitation of use:**

Employment restrictions concerning juveniles must be observed.

Employment restrictions concerning pregnant and lactating women must be observed.

- **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. Application, use and handling of our products take place out of our control and are solely your responsibility.

- **Relevant phrases**

H272 May intensify fire; oxidiser.

H312 Harmful in contact with skin.

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:** Product management

- **Contact:** Product management

- **Abbreviations and acronyms:**

ADR: Accord relatif au transport international 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

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ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

DNEL: Derived No-Effect Level (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

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

**\* Data compared to the previous version altered.**

E