

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/22/2019

Reviewed on 03/22/2019

1 Identification

- **Product identifier**
- **Trade name:** Silver nitrate
- **Article number:** 35110
- **CAS Number:**
7761-88-8
- **EC number:**
231-853-9
- **Index number:**
047-001-00-2
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
SERVA Electrophoresis GmbH
Carl-Benz-Str. 7
D-69115 Heidelberg
Tel.: +49 6221 13840-0
FAX: +49 6221 13840-10
msds.info@serva.de
- **Information department:** Product Safety department Tel.: +49 6221 13840-35
- **Emergency telephone number:**
Medical Emergency Information in case of poisoning:
Poison Information Center Mainz - Phone: +49 (0) 6131 19240
(advisory service in German or English language)



2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS03

Ox. Sol. 2 H272 May intensify fire; oxidizer.



GHS05

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

- **Label elements**

- **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms** GHS03, GHS05

- **Signal word** Danger

- **Hazard statements**

May intensify fire; oxidizer.

Causes severe skin burns and eye damage.

- **Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Avoid release to the environment.

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

If swallowed: Rinse mouth. Do NOT induce vomiting.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

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*Store locked up.**Dispose of contents/container in accordance with local/regional/national/international regulations.*· **Classification system:**· **NFPA ratings (scale 0 - 4)**

Health = 3

Fire = 3

Reactivity = 0

The substance possesses oxidizing properties.· **HMIS-ratings (scale 0 - 4)**

Health = 3

Fire = 3

Reactivity = 0

· **Other hazards**· **Results of PBT and vPvB assessment**· **PBT:** PBT - assessment not available.· **vPvB:** vPvB - assessment not available.

3 Composition/information on ingredients

· **Chemical characterization: Substances**· **CAS No. Description**

7761-88-8 silver nitrate

· **Identification number(s)**· **EC number:** 231-853-9· **Index number:** 047-001-00-2· **Description:**· **Empirical formula:** Ag N O₃· **MW:** 169.89

4 First-aid measures

· **Description of first aid measures**· **General information:** Immediately remove any clothing soiled by the product.· **After inhalation:** Supply fresh air and to be sure call for a doctor.· **After skin contact:**

Immediately wash with water and soap and rinse thoroughly. Consult doctor if you feel unwell.

· **After eye contact:**

Rinse opened eye for several minutes under running water. Remove present contact lenses, if easy to do, and continue rinsing. Consult ophthalmologist immediately.

· **After swallowing:**

Wash out mouth instantly. Drink copious amounts of water and provide fresh air. Call for doctor immediately.

Do not induce vomiting!

· **Information for doctor:**· **Most important symptoms and effects, both acute and delayed** Coughing· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

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5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂ extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**
Oxidizer. May intensify fire.
In case of fire, the following can be released:
Nitrogen oxides (NO_x)
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
Ensure adequate ventilation
Avoid formation of dust.
Avoid contact with the eyes and skin.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Pick up mechanically.
Dispose contaminated material as waste according to item 13.
- **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.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Prevent formation of dust.
Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** Substance/product is oxidizing when dry.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store only in unopened original receptacles.
- **Information about storage in one common storage facility:** Store away from flammable substances.
- **Further information about storage conditions:** Keep receptacle tightly sealed and store in dry conditions.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

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

7761-88-8 silver nitrate (80-100%)

PEL ()	0.01 mg/m ³ as Ag
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REL () 0.01 mg/m³
as Ag

TLV () 0.01 mg/m³
as Ag

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
 - Keep away from foodstuffs, beverages and feed.
 - Store protective clothing separately.
 - Immediately remove all soiled and contaminated clothing.
 - Avoid contact with the eyes and skin.
 - Wash hands before breaks and at the end of work.
- **Breathing equipment:**
 - Short term filter device:
 - Filter P2
- **Protection of hands:**
 - Rubber gloves
 - 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.
- **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 of a maximum of 15 minutes gloves made of the following materials are suitable:**
 - Nitrile rubber, NBR
 - Neoprene gloves
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
 - Form:** Crystalline
 - Color:** White
 - Odor:** Odorless
- **pH-value:** 4-6
- **Change in condition**
 - Melting point/Melting range:** 210 °C (410 °F)
 - Boiling point/Boiling range:** Undetermined.
- **Flash point:** no information available
- **Flammability (solid, gaseous):** Material causes or contributes to combustion.
- **Decomposition temperature:** 444 °C (831.2 °F)

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- | | |
|---|---|
| · Danger of explosion: | Product does not present an explosion hazard. |
| · Density at 20 °C (68 °F): | 4.35 g/cm ³ (36.30075 lbs/gal) |
| · Solubility in / Miscibility with Water at 20 °C (68 °F): | 2160 g/l |
| · Other information | No further relevant information available. |

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions**
 - Danger of causing or intensifying fires.
 - Corrosive action on metals.
 - Reaction with alcohol will result in formation of an explosive fulminate.
- **Conditions to avoid**
 - exposure to the light
 - Avoid high temperatures, flames, sparks
- **Incompatible materials:**
 - Avoid contact with:
 - combustible materials.
 - reducing agents
 - aqueous ammonia
- **Hazardous decomposition products:** In case of fire: See Section 5

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** Caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
 - Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

12 Ecological information

- **Toxicity**
 - **Aquatic toxicity:**
 - Acute toxicity to fish LC50/96h (Pimephales promelas): 0,0012 mg/l
- | | |
|----------|------------------------------|
| EC50/48h | 0.00022 mg/l (Daphnia magna) |
|----------|------------------------------|
- **Persistence and degradability** No further relevant information available.
 - **Behavior in environmental systems:**
 - **Bioaccumulative potential** No further relevant information available.
 - **Mobility in soil** No further relevant information available.

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- **Ecotoxical effects:**
- **Remark:** Very toxic to aquatic life with long lasting effects.
- **Additional ecological information:**
- **General notes:**
 Water hazard class 3 (Assessment by list): extremely hazardous for water
 Do not allow product to reach ground water, water course or sewage system, even in small quantities.
 Must not reach bodies of water or drainage ditch undiluted or unneutralized.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
 Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
 Disposal must be made according to official regulations.
- **Uncleaned packagings:**
- **Recommendation:**
 Disposal of uncleaned packagings must be made according to official regulations in the same manner as the product.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- **UN-Number**
- **DOT, ADR, IMDG, IATA** UN1493
- **UN proper shipping name**
- **DOT** Silver nitrate
- **ADR** 1493 Silver nitrate, ENVIRONMENTALLY HAZARDOUS
- **IMDG** SILVER NITRATE, MARINE POLLUTANT
- **IATA** SILVER NITRATE
- **Transport hazard class(es)**
- **DOT**
- 
- **Class** 5.1 Oxidizing substances
- **Label** 5.1
- **ADR, IMDG**
- 
- **Class** 5.1 Oxidizing substances

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· Label	5.1
· IATA	
	
· Class	5.1 Oxidizing substances
· Label	5.1
· Packing group	
· DOT, ADR, IMDG, IATA	II
· Environmental hazards:	Environmentally hazardous substance, solid; Marine Pollutant
· Marine pollutant:	Yes (P)
	Symbol (fish and tree)
· Special marking (ADR):	Symbol (fish and tree)
· Special precautions for user	Warning: Oxidizing substances
· Danger code (Kemler):	50
· EMS Number:	F-A,S-Q
· Segregation groups	Heavy metals and their salts (including their organometallic compounds)
· Stowage Category	A
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Remarks:	Special marking with the symbol (fish and tree).
· ADR	
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· IMDG	
· Limited quantities (LQ)	1 kg
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· UN "Model Regulation":	UN 1493 SILVER NITRATE, 5.1, II, ENVIRONMENTALLY HAZARDOUS

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15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Section 355 (extremely hazardous substances):** Substance is not listed.
- **Section 313 (Specific toxic chemical listings):** Substance is listed.
- **TSCA (Toxic Substances Control Act):** Substance is listed.
- **Proposition 65** Substance is not listed.
- **Chemicals known to cause cancer:** Substance is not listed.
- **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.
- **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
- **Chemicals known to cause developmental toxicity:** Substance is not listed.
- **Carcinogenicity categories**
- **EPA (Environmental Protection Agency)** Substance is not listed.

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- **TLV (Threshold Limit Value established by ACGIH)** Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
- **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms** GHS03, GHS05
- **Signal word** Danger
- **Hazard statements**
May intensify fire; oxidizer.
Causes severe skin burns and eye damage.
- **Precautionary statements**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Rinse mouth. Do NOT induce vomiting.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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.

- **Department issuing SDS:** Product safety department
- **Contact:** +49 6221 13840-35
- **Date of preparation / last revision** 03/22/2019 / 2
- **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)
ICAO: International Civil Aviation Organisation
PBT: persistent, bioaccumulative, toxic substance (REACH)
vPvB: very persistent, very bioaccumulative substance (REACH)
REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
CLP: Regulation on classification, labelling and packaging of substances and mixtures
bw: body weight
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
DOT: US Department of Transportation
IATA: International Air Transport Association
P: Marine Pollutant
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Ox. Sol. 2: Oxidizing solids – Category 2
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
- *** Data compared to the previous version altered.**