

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

Printing date 01.12.2011

Version number 1

Revision: 15.07.2009

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

### 1.1. 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

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

· Application of the substance / the preparation Laboratory chemicals

· 1.3. 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

· 1.4. Emergency telephone number: +49 6131 19240 (university hospital Mainz)

**SERVA**  
Electrophoresis

## 2 Hazards identification

· 2.1. Classification of the substance or mixture

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



GHS03

Ox. Sol. 2

H272 May intensify fire; oxidiser.



GHS05

Skin Corr. 1B

H314 Causes severe skin burns and eye damage.



GHS09

Aquatic Acute 1 H400 Very toxic to aquatic life.

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

· Classification according to Directive 67/548/EEC or Directive 1999/45/EC



C; Corrosive

R34:

Causes burns.



N; Dangerous for the environment

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· Information concerning particular hazards for human and environment: not applicable

· Classification system:

The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.

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- **2.2. Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
The substance is classified and labelled according to the CLP regulation.
- **Hazard pictograms** GHS03, GHS05, GHS09
- **Signal word** Danger
- **Hazard statements**  
H272 May intensify fire; oxidiser.  
H314 Causes severe skin burns and eye damage.  
H410 Very toxic to aquatic life with long lasting effects.
- **Precautionary statements**  
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P273 Avoid release to the environment.  
P260 Do not breathe dust.  
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **2.3. Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **3.1. 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 O<sub>3</sub>
- **MW:** 169,89

### 4 First aid measures

- **4.1. Description of first aid measures**
- **General information** Remove contaminated clothing.
- **After inhalation** Supply fresh air and to be sure call for a doctor.
- **After skin contact** Immediately rinse with water.
- **After eye contact** Rinse opened eye for several minutes under running water. Then consult doctor.
- **After swallowing** Drink copious amounts of water and provide fresh air. Call for doctor immediately.
- **Information for doctor**
- **4.2. Most important symptoms and effects, both acute and delayed** Coughing
- **4.3. Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Firefighting measures

- **5.1. Extinguishing media**
- **Suitable extinguishing agents**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

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- **5.2. Special hazards arising from the substance or mixture**  
In case of fire, the following can be released:  
Nitrogen oxides (NOx)
- **5.3. 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

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

## 7 Handling and storage

- **Handling**
- **7.1. 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.
- **7.2. 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.  
Store in dry conditions.
- **7.3. 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.

### 8.1. Control parameters

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

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

WEL ()	Long-term value: 0.01 mg/m <sup>3</sup> as Ag
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- **Additional information:** The lists that were valid during the creation 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

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Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **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:**

Neoprene gloves

· **Eye protection:** Safety glasses

· **Body protection:** Protective work clothing.

**9 Physical and chemical properties**

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

· **General Information**

· **Appearance:**

Form: Crystalline

Colour: White

· **Odour:** Odourless

· **pH-value (100 g/l) at 20°C:** 4.0 - 5.5

· **Change in condition**

Melting point/Melting range: 210°C

Boiling point/Boiling range: undetermined

· **Flash point:** Not applicable

· **Flammability (solid, gaseous)** Product is not flammable.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Density at 20°C:** 4.35 g/cm<sup>3</sup>

· **Solubility in / Miscibility with**

Water at 20°C: 1438 g/l

· **9.2. Other information** No further relevant information available.

**10 Stability and reactivity**

· **10.1. Reactivity**

· **10.2. Chemical stability**

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

· **10.3. Possibility of hazardous reactions**

Danger of causing or intensifying fires.

Corrosive action on metals

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- Reaction with alcohol will result in formation of an explosive fulminate.
- **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

## 11 Toxicological information

- **11.1. Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

Oral	LD50	50 mg/kg (Maus)
		1173 mg/kg (rat)
	LC50/96h	0.0085 mg/l (Fish)

- **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.

## 12 Ecological information

- **12.1. Toxicity**

- **Acquatic toxicity:**

EC50/48h	0.0006 mg/l (Daphnia magna)
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- **12.2. Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **12.3. Bioaccumulative potential** No further relevant information available.
- **12.4. Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**  
Water danger class 3 (German Regulation) (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 sewage water or drainage ditch undiluted or unneutralized.  
Danger to drinking water if even extremely small quantities leak into the ground.  
Also poisonous for fish and plankton in water bodies.  
Very toxic for aquatic organisms
- **12.5. Results of PBT and vPvB assessment**
- **PBT:** PBT - assessment not available.
- **vPvB:** vPvB - assessment not available.
- **12.6. Other adverse effects** No further relevant information available.

## 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.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

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· **Recommended cleansing agent:** Water, if necessary with cleansing agents.**14 Transport information**

· 14.1. UN-Number

· ADR, IMDG, IATA

UN1493

· 14.2. UN proper shipping name

· ADR

1493 SILVER NITRATE

· IMDG, IATA

SILVER NITRATE

· 14.3. Transport hazard class(es)

· ADR



· Class

5.1 Oxidising substances.

· Label

5.1

· IMDG



· Class

5.1 Oxidising substances.

· Label

5.1

· IATA



· Class

5.1 Oxidising substances.

· Label

5.1

· 14.4. Packing group

· ADR, IMDG, IATA

II

· 14.5. Environmental hazards:

Environmentally hazardous substance, solid; Marine Pollutant

· Marine pollutant:

Yes (P)

Symbol (fish and tree)

· Special marking (ADR):

Symbol (fish and tree)

· 14.6. Special precautions for user

Warning: Oxidising substances.

· Danger code (Kemler):

50

· EMS Number:

F-A,S-Q

· Segregation groups

Heavy metals and their salts (including their

· 14.7. Transport in bulk according to Annex II of

MARPOL73/78 and the IBC Code

Not applicable.

· Transport/Additional information:

· ADR

· Tunnel restriction code

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· <b>UN "Model Regulation":</b>	UN1493, SILVER NITRATE, 5.1, II
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**15 Regulatory information**

- **15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Water hazard class:** Water danger class 3 (Assessment by list): extremely hazardous for water.
- **15.2. 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 MSDS:** Product safety department

· **Contact:** +49 6221 13840-35

· **Abbreviations and acronyms:**

*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*

*ADR: Accord européen sur le transport 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*

*ICAO: International Civil Aviation Organization*

*P: Marine Pollutant*

*GHS: Globally Harmonized System of Classification and Labelling of Chemicals*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

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

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

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

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