

Safety Data Sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 03.10.2025

Version number 2 (replaces version 1)

Revision: 03.10.2025

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

- **1.1 Product identifier**
- **Trade name:** Silver Nitrate 99%
- **Product Code:** 50-2900
- **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**
- **Product category** PC21 Laboratory chemicals
- **Application of the substance / the mixture** Laboratory chemicals
- **Uses advised against** Any use not specified above.
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Severn Biotech Ltd.
Unit 2,
Park Lane,
Kidderminster,
Worcestershire.
DY11 6TJ
UK
Tel: 0044 1562 825286
Fax: 0044 1562 825284
email: info@severnbiotech.com
- **Further information obtainable from:** Product safety department.
- **1.4 Emergency telephone number:**
Members of the public seeking specific information on poisons should contact:
In England and Wales: NHS 111 - dial 111
In Scotland: NHS 24 - dial 111

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to GB-CLP**

Ox. Sol. 2	H272	May intensify fire; oxidiser.
Met. Corr.1	H290	May be corrosive to metals.
Skin Corr. 1A	H314	Causes severe skin burns and eye damage.
Eye Dam. 1	H318	Causes serious eye damage.
Repr. 1B	H360D	May damage the unborn child.
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 GB-CLP** The substance is classified and labelled according to the GB CLP regulation.

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· Hazard pictograms



· Signal word Danger

· Hazard statements

- H272 May intensify fire; oxidiser.
- H290 May be corrosive to metals.
- H314 Causes severe skin burns and eye damage.
- H360D May damage the unborn child.
- H410 Very toxic to aquatic life with long lasting effects.

· Precautionary statements

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or 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.
- P310 Immediately call a POISON CENTER/doctor.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local regulations.

· 2.3 Other hazards

· Results of PBT and vPvB assessment

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

SECTION 3: Composition/information on ingredients

· 3.1 Substances

· CAS No. Description

CAS: 7761-88-8 Silver nitrate

· Identification number(s)

- **EC number:** 231-853-9
- **Index number:** 047-001-00-2

* SECTION 4: First aid measures

· 4.1 Description of first aid measures

· General information:

Immediately remove any clothing soiled by the product.
Rinse contaminated clothes (fire hazard) with plenty of water.

· After inhalation:

In case of inhalation:

- Provide fresh air.
- In case of breathing difficulties administer oxygen.
- No mouth-to-mouth or mouth-to-nose resuscitation. Use respiratory bag or oxygen resuscitation apparatus.
- Do not leave patient unattended.

In case of unconsciousness place patient stably in side position for transportation.

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- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
Chemical burns must be treated promptly by a physician.
- **After eye contact:**
Check for and remove any contact lenses.
Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
- **Information for doctor:**
Nitrates may cause effects on the blood, resulting in formation of methaemoglobin when ingested. The effects may be delayed. Medical observation is indicated.
- **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:** Water
- **For safety reasons unsuitable extinguishing agents:** Foam
- **5.2 Special hazards arising from the substance or mixture**
Strong oxidiser. Contact with combustible or flammable substances may cause fire.
In case of fire, the following can be released:
Nitrogen oxides (NO_x)
- **5.3 Advice for firefighters**
- **Protective equipment:**
Do not inhale explosion gases or combustion gases.
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **Additional information**
Cool endangered receptacles with water spray.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

* SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Avoid formation of dust.
Ensure adequate ventilation
- **6.2 Environmental precautions:**
Do not allow to enter sewers/ surface or ground water.
Do not allow to penetrate the ground/soil.
- **6.3 Methods and material for containment and cleaning up:**
Pick up mechanically.
Ensure adequate ventilation.
Send for recovery or disposal in suitable receptacles.
Wash the area with plenty of water.
Do not use combustible materials such as paper towels to clean up spills.

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· 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

- Prevent formation of dust.
- Ensure good ventilation/exhaustion at the workplace.
- Avoid contact with clothing and other combustible materials.
- Safety showers and eye wash facilities should be available at the work area.
- Avoid direct contact (skin/eye contact, ingestion and/or inhalation of fume/mist/dust) with the product in the undiluted form.

· Information about fire - and explosion protection: Potentially explosive when mixed with organic substances.

· 7.2 Conditions for safe storage, including any incompatibilities

· Storage:

· Requirements to be met by storerooms and receptacles:

- Do not store on combustible materials such as wooden floors or wooden pallets.
- Prevent any seepage into the ground.

· Information about storage in one common storage facility:

- Store away from flammable substances.
- Store away from reducing agents.
- Store away from foodstuffs.

· Further information about storage conditions:

- Store in a banded area.
- Store in cool, dry conditions in well sealed receptacles.

· Storage class: 5.1 B

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

* SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

· Ingredients with limit values that require monitoring at the workplace:

CAS: 7761-88-8 Silver nitrate

WEL	Long-term value: 0.01 mg/m ³ as Ag
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· DNELs

Oral	Long-term systemic effects	110 µg/kg bw/day (general population)
Dermal	Long-term systemic effects	110 µg/kg bw/day (general population) 220 µg/kg bw/day (worker)
Inhalative	Long-term systemic effects	150 µg/m ³ (general population) 600 µg/m ³ (worker)

· PNECs

Freshwater	46 ng/L
Marine water	860 ng/L

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Sewage Treatment Plant	25 µg/L
Sediment (freshwater)	438.13 mg/kg
Sediment (marine water)	438.13 mg/kg
Soil	1.05 mg/kg

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

· **8.2 Exposure controls**

· **Appropriate engineering controls** No further data; see section 7.

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

· **General protective and hygienic measures:**

Take note of assigned Workplace Exposure Limits.

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.

Do not eat, drink, smoke or sniff while working.

Do not breathe dust

A safe system of work must be formulated and followed to ensure safe working with this product. Relevant workers must receive suitable and sufficient training and supervision.

Ensure that eyewash stations and safety showers are close to the workstation location.

· **Respiratory protection:**



When dust/mist are present use a Particulate filter, type P2.

· **Hand protection**



Protective gloves.

Use gloves tested and approved under appropriate government standards such as NIOSH (US) or EN374 (EU).

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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

· **Material of gloves**

Butyl rubber, BR

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**

Break-through time: > 480 minutes

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

· **Eye/face protection**



Safety glasses with side-shields conforming to EN166.

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).



Use visor if handling dust.

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· **Body protection:**



Protective work clothing

Do not get on skin or clothing. Wear clothing and footwear that cannot be penetrated by the product. Suitable protective equipment may include: Chemical resistant boots, Chemical resistant apron, Full chemical protective suit with a hood, Chemical protective suit consisting of a jacket and trousers. The jacket should be buttoned up to the neck, sleeves sealed at the gloves, and trouser legs worn outside the boots. These precautions are required to prevent the clothing from accidentally trapping product against the skin.

- **Environmental exposure controls** Do not allow to enter drains, sewers or watercourses.
- **Risk management measures** The operators shall be instructed adequately.

* SECTION 9: Physical and chemical properties

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

· **General Information**

· Physical state	Solid
· Colour:	Colourless
· Odour:	Characteristic
· Odour threshold:	Not determined.
· Melting point/freezing point:	212 °C
· Boiling point or initial boiling point and boiling range	250 °C
· Flammability	Contact with combustible material may cause fire.
· Lower and upper explosion limit	
· Lower:	Not determined.
· Upper:	Not determined.
· Flash point:	Not applicable.
· Decomposition temperature:	Not determined.
· pH	Not applicable.
· Viscosity:	
· Kinematic viscosity	Not applicable.
· Dynamic:	Not applicable.
· Solubility	
· water at 20 °C:	2160 g/l
· Partition coefficient n-octanol/water (log value)	Not determined.
· Vapour pressure:	Not applicable.
· Density and/or relative density	
· Density at 20 °C:	4.35 g/cm ³
· Relative density	Not determined.
· Vapour density	Not applicable.

· **9.2 Other information**

· Appearance:	
· Form:	Crystalline
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Not determined.
· Explosive properties:	Not determined.
· Molecular weight	169.87 g/mol

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· Change in condition	
· Evaporation rate	Not applicable.
· Information with regard to physical hazard classes	
· Explosives	Not applicable
· Flammable gases	Not applicable
· Aerosols	Not applicable
· Oxidising gases	Not applicable
· Gases under pressure	Not applicable
· Flammable liquids	Not applicable
· Flammable solids	Not applicable
· Self-reactive substances and mixtures	Not applicable
· Pyrophoric liquids	Not applicable
· Pyrophoric solids	Not applicable
· Self-heating substances and mixtures	Not applicable
· Substances and mixtures, which emit flammable gases in contact with water	Not applicable
· Oxidising liquids	Not applicable
· Oxidising solids	May intensify fire; oxidiser.
· Organic peroxides	Not applicable
· Corrosive to metals	May be corrosive to metals.
· Desensitised explosives	Not applicable

* SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
Decomposes on heating, producing oxides of nitrogen.
To avoid thermal decomposition do not overheat.
- **10.3 Possibility of hazardous reactions**
Reacts violently with combustible and reducing materials, causing fire and explosion hazard.
- **10.4 Conditions to avoid** Heat and static discharge.
- **10.5 Incompatible materials:**
Flammable materials
Strong bases.
Combustible materials.
Reducing agents
- **10.6 Hazardous decomposition products:** Nitrogen oxides (NO_x)

* 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 relevant for classification:**

Oral	LD50	> 2,000 mg/kg (rat)
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- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes severe skin burns and eye damage.

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- **Serious eye damage/irritation**
Causes serious eye damage.
- **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**
May damage the unborn child.
- **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.
- **Additional toxicological information:**
Depending on the degree of exposure, periodic medical examination is suggested.
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of oesophagus and stomach.
Inhalation may cause lung oedema, but only after initial corrosive effects on eyes and/or airways have become manifest. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered.
Absorption of significant amounts of nitrates may cause: abdominal pain; blue lips or fingernails; blue skin; dizziness; laboured breathing; confusion; convulsions; diarrhoea; headache; nausea; unconsciousness.
- **11.2 Information on other hazards**
- **Endocrine disrupting properties** Substance is not listed.

* SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** Inorganic substance: not applicable
- **12.3 Bioaccumulative potential** Product is not expected to bioaccumulate.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**
Very toxic for aquatic organisms
Also poisonous for fish and plankton in water bodies.
Must not reach sewage water or drainage ditch undiluted or unneutralised.
Water hazard 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.
Danger to drinking water if even extremely small quantities leak into the ground.

* SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Recommended Hierarchy of Controls:
 - Minimise waste;
 - Reuse if not contaminated;

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- Recycle, if possible; or
- Safe disposal (if all else fails).

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

Contact waste processors for recycling information.

Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

Do not mix with other waste streams.

· **Uncleaned packaging:**

· **Recommendation:**

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

Disposal must be made according to official regulations.

Container remains hazardous when empty. Continue to observe all precautions.

Do not mix with other waste streams.

· **Recommended cleansing agents:** Large quantities of water

* SECTION 14: Transport information

· **14.1 UN number or ID number**

· **ADR/RID/ADN, IMDG, IATA**

UN1493

· **14.2 UN proper shipping name**

· **ADR/RID/ADN**

UN1493 SILVER NITRATE, ENVIRONMENTALLY
HAZARDOUS
SILVER NITRATE

· **IMDG, IATA**

· **14.3 Transport hazard class(es)**

· **ADR/RID/ADN**



· **Class**

5.1 (O2) Oxidising substances.

· **Label**

5.1

· **IMDG**



· **Class**

5.1 Oxidising substances.

· **Label**

5.1

· **IATA**



· **Class**

5.1 Oxidising substances.

· **Label**

5.1

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· 14.4 Packing group · ADR/RID/ADN, IMDG, IATA	II
· 14.5 Environmental hazards: · Marine pollutant: · Special marking (ADR/RID/ADN):	Environmentally hazardous substance, solid Symbol (fish and tree) Symbol (fish and tree)
· 14.6 Special precautions for user · Hazard identification number (Kemler code): · Emergency Action Code: · EMS Number: · Segregation groups · Stowage Category	Warning: Oxidising substances. 50 1Y F-A,S-Q (SGG7) Heavy metals and their salts (including their organometallic compounds) A
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	Amounts up to 5kg or 5L per single or inner package do not require the Environmentally Hazardous mark in accordance with ADR 5.2.1.8.1 and IMDG 2.10.2.7.
· ADR/RID/ADN · Limited quantities (LQ) · Excepted quantities (EQ) · Transport category · Tunnel restriction code	1 kg Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g 2 E
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	1 kg 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

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Poisons Act**
- **Regulated explosives precursors** Substance is not listed.
- **Regulated poisons** Substance is not listed.
- **Reportable explosives precursors** Substance is not listed.
- **Reportable poisons** Substance is not listed.
- **Control Of Major Accident Hazards Regulations 2015 (COMAH)**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **COMAH category**
P8
E1
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t

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

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

- **Training hints**

This product should only be handled by workers who have received sufficient training in the safe handling and use of chemical products.

- **Department issuing SDS:** Product safety department.

- **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

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

DNEL: Derived No-Effect Level (UK REACH)

PNEC: Predicted No-Effect Concentration (UK 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. 1A: Skin corrosion/irritation – Category 1A

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Repr. 1B: Reproductive toxicity – Category 1B

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.**