

SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Revision Date 03/26/2020

Version 1.11

SECTION 1. Identification

Product identifier

Product number	101510
Product name	Silver nitrate cryst. extra pure
CAS-No.	7761-88-8

Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Pharmaceutical production, Reagent for research and development
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Details of the supplier of the safety data sheet

Company	Millipore (Canada) Ltd. 2149 Winston Park Dr. Oakville Ontario L6H 6J8 Canada General Inquiries: +1 905 829 9500 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5) MilliporeSigma is a business of Merck KGaA, Darmstadt, Germany.
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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SECTION 2. Hazards identification

GHS Classification

Oxidizing solid, Category 2, H272
Corrosive to Metals, Category 1, H290
Skin corrosion, Category 1B, H314
Serious eye damage, Category 1, H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

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Hazard pictograms



Signal Word
Danger

Hazard Statements

H272 May intensify fire; oxidizer.
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

Precautionary Statements

P210 Keep away from heat.
P220 Keep/Store away from clothing/ combustible materials.
P221 Take any precaution to avoid mixing with combustibles.
P234 Keep only in original container.
P260 Do not breathe dusts or mists.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove person to fresh air and keep 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.
P310 Immediately call a POISON CENTER/doctor.
P321 Specific treatment (see supplemental first aid instructions on this label).
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P390 Absorb spillage to prevent material damage.
P405 Store locked up.
P406 Store in corrosive resistant stainless steel container with a resistant inner liner.
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

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Formula	AgNO ₃	AgNO ₃ (Hill)
Molar mass	169.87 g/mol	

Hazardous ingredients

Chemical name (Concentration)

CAS-No.

Silver nitrate (>= 90 % - <= 100 %)

7761-88-8

SECTION 4. First aid measures

Description of first-aid measures

General advice

First aider needs to protect himself.

Inhalation

After inhalation: fresh air. Call in physician.

Skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

Eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

Ingestion

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation!). Call a physician immediately. Do not attempt to neutralize.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Cough, Dizziness, Vomiting, Diarrhea, gastric spasms, Shortness of breath, Unconsciousness, death
Risk of permanent damage due to staining of the cornea.
Risk of blindness!

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

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Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapors.

Fire may cause evolution of:

nitrogen oxides

Has a fire-promoting effect due to release of oxygen.

Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Conduct recycling.

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

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Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

No metal containers.

Protected from light.

Tightly closed. Do not store near combustible materials.

Storage temperature: no restrictions.

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Components

Basis	Value	Threshold limits	Remarks
<i>Silver nitrate 7761-88-8</i>			
CAD AB OEL	Time Weighted Average (TWA):	0.01 mg/m ³	Expressed as: as Ag
CAD BC OEL	Short Term Exposure Limit (STEL):	0.03 mg/m ³	Expressed as: as Ag
	Time Weighted Average (TWA):	0.01 mg/m ³	Expressed as: as Ag
CAD MB OEL	Time Weighted Average (TWA):	0.01 mg/m ³	Expressed as: as Ag
CAD ON OEL	Time Weighted Average (TWAEV):	0.01 mg/m ³	Expressed as: as Ag
CAD SK OEL	15 minute average contamination limit:	0.03 mg/m ³	Expressed as: as Ag
	8 hour average contamination limit:	0.01 mg/m ³	Expressed as: as Ag
OEL (QUE)	Time Weighted Average (TWA):	0.01 mg/m ³	Expressed as: as Ag

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream.
Wash hands and face after working with substance.

Eye/face protection

Tightly fitting safety goggles

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Hand protection

full contact:

Glove material: Nitrile rubber
Glove thickness: 0.11 mm
Break through time: 480 min

splash contact:

Glove material: Nitrile rubber
Glove thickness: 0.11 mm
Break through time: 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment:

protective clothing

Respiratory protection

required when dusts are generated.

Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer.

These measures have to be properly documented.

SECTION 9. Physical and chemical properties

Physical state	crystals
Color	colorless
Odor	odorless
Odor Threshold	Not applicable
pH	5.4 - 6.4 at 100 g/l 68 °F (20 °C)

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Melting point	414 °F (212 °C)
Boiling point/boiling range	831 °F (444 °C) at 1,013 hPa (decomposition)
Flash point	Not applicable
Evaporation rate	No information available.
Flammability (solid, gas)	The product is not flammable.
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor pressure	Not applicable
Relative vapor density	No information available.
Density	4.35 g/cm ³ at 68 °F (20 °C)
Relative density	No information available.
Water solubility	2,160 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	> 831 °F (> 444 °C)
Viscosity, dynamic	Not applicable
Explosive properties	Not classified as explosive.
Oxidizing properties	The substance or mixture is classified as oxidizing with the category 2.
Ignition temperature	Not applicable

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Bulk density	ca.2,350 kg/m ³
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SECTION 10. Stability and reactivity

Reactivity

has a corrosive effect

Chemical stability

Sensitivity to light

Possibility of hazardous reactions

Risk of explosion with:

Acetaldehyde, Acetylene, Nitriles, Ammonia, ammonium hydroxide, azides, combustible substances, carbides, ethanol, Fluoroacetylene, Hydrazine hydrate, acetylidene, Sodium hydroxide, Nitromethane, Organic Substances, phosphorus, phosphorus hydrogen, sulfur, Titanium, Zinc, charcoal, Activated charcoal

Ammonia, with, ethanol

Ammonia, with, Sodium hydroxide solution

powdered magnesium, with, Water

Risk of ignition or formation of inflammable gases or vapors with:

arsenic, oxidizable substances

Exothermic reaction with:

nonmetals, oxidizable substances, iodides, strong reducing agents, halogen-halogen compounds

Conditions to avoid

Strong heating (decomposition).

Exposure to light.

Incompatible materials

Aluminum, Mild steel

Metals

Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact, Ingestion

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Acute oral toxicity

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Acute inhalation toxicity

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Corrosive to respiratory system.

Skin irritation

In vitro study

Result: Corrosive

OECD Test Guideline 431

Causes burns.

Eye irritation

Rabbit

Result: Causes burns.

(External MSDS)

Causes serious eye damage. Risk of permanent damage due to staining of the cornea.

Risk of blindness!

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

(External MSDS)

Specific target organ systemic toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

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NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

After uptake:

Vomiting, gastric spasms, Diarrhea, Dizziness, Unconsciousness, death

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

semi-static test LC50 Pimephales promelas (fathead minnow): 0.0012 mg/l; 96 h

Analytical monitoring: yes(ECHA)

Toxicity to daphnia and other aquatic invertebrates

semi-static test LC50 Daphnia magna (Water flea): 0.00022 mg/l; 48 h

Analytical monitoring: yes(ECHA)

Toxicity to bacteria

EC10 Pseudomonas putida: 0.006 mg/l; 16 h (External MSDS)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

semi-static test NOEC Daphnia magna (Water flea): 0.00032 mg/l; 21 d

Analytical monitoring: yes

US-EPA

Persistence and degradability

Biodegradability

The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Additional ecological information

Biological effects:

Forms corrosive mixtures with water even if diluted.

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Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

UN number UN 1493
Proper shipping name SILVER NITRATE
Class 5.1
Packing group II
Environmentally hazardous --

Air transport (IATA)

UN number UN 1493
Proper shipping name SILVER NITRATE
Class 5.1
Packing group II
Environmentally hazardous --
Special precautions for user no

Sea transport (IMDG)

UN number UN 1493
Proper shipping name SILVER NITRATE
Class 5.1
Packing group II
Environmentally hazardous --
Special precautions for user yes
EmS F-A S-Q

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SECTION 15. Regulatory information

United States of America

Canada

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

Labeling

Hazard pictograms



Signal Word

Danger

Hazard Statements

H272 May intensify fire; oxidizer.

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention

P221 Take any precaution to avoid mixing with combustibles, heavy-metal compounds, acids and alkalis.

P273 Avoid release to the environment.

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

Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.

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Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/physician.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 03/26/2020

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact mlsbranding@sial.com.

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