

**Safety Data Sheet**

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

**Effective date:** 10.24.2014**Revision:** 10.24.2014**Trade Name:** Silver Nitrate Crystals**1 Identification of the substance/mixture and of the supplier****1.1 Product identifier****Trade Name:** Silver Nitrate Crystals**Synonyms:****Product number:** 047-001-00-2**1.2 Application of the substance / the mixture:** Metal working**1.3 Details of the supplier of the Safety Data Sheet****Manufacturer**Ames Goldsmith Corp.  
50 Harrison Avenue  
South Glens Falls, NY 12803  
518-792-5808**Emergency telephone number:****CHEMTREC**

Within USA and Canada: 1-800-424-9300 (CHEMTREC, 24 hours)

Outside USA and Canada: +1-703-527-3887 (CHEMTREC, 24 hours)

**2 Hazards identification****2.1 Classification of the substance or mixture:**

In compliance with EC regulation No. 1272/2008, 29CFR1910/1200 and GHS Rev. 3 and amendments.

**Hazard-determining components of labeling:**

Silver Nitrate

**2.2 Label elements:**Skin corrosion, category 1B  
Serious eye damage, category 1  
Oxidizing solids, category 2  
Acute hazards to the aquatic environment, category 1  
Chronic hazards to the aquatic environment, category 1**Hazard pictograms:****Signal word:** Danger**Hazard statements:**H272 May intensify fire; oxidizer.  
H314 Causes severe skin burns and eye damage.  
H318 Causes serious 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.  
P220 Keep/Store away from clothing/combustible materials.  
P221 Take any precaution to avoid mixing with combustibles.  
P260 Do not breathe dust/fume/gas/mist/vapors/spray.  
P264 Wash skin thoroughly after handling.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

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P301+330+331 If swallowed: Rinse mouth. Do not induce vomiting.  
 P303+361+353 If on skin (or hair): Immediately remove/take off all contaminated clothing. Rinse skin with water/shower.  
 P304+340 If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 P305+351+338 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 or doctor/physician.  
 P310 Immediately call a poison center or doctor/physician.  
 P321 Specific treatment (see supplemental first aid instructions on this label).  
 P363 Wash contaminated clothing before reuse.  
 P370+378 In case of fire: Use agents recommended in section 5 for extinction.  
 P391 Collect spillage.  
 P405 Store locked up.  
 P501 Dispose of contents and container as instructed in Section 13.

**Additional information:** None**Hazard description****Hazards Not Otherwise Classified (HNOC):** None**Information concerning particular hazards for humans and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

**Classification system:**

The classification is according to EC regulation No. 1272/2008, 29CFR1910/1200 and GHS Rev. 3 and amendments, and extended by company and literature data. The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

**3 Composition/information on ingredients****3.1 Chemical characterization:** Substance.**3.2 Description:**  
Silver nitrate.**3.3 Hazardous components (percentages by weight):**

CAS / EINECS #	Ingredient Name	Wt. %
CAS # 7761-88-8 EINECS # 231-853-9	Silver Nitrate	>99

**3.4 Additional Information:** None**4 First aid measures****4.1 Description of first aid measures****General information:**

Immediately remove any clothing soiled by the product.

**After inhalation:**

Move exposed individual to fresh air.  
 Loosen clothing as necessary and position individual in a comfortable position.  
 Seek medical advice if discomfort or irritation persists.

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Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

#### After skin contact:

Immediately rinse with water.  
If skin irritation continues, consult a doctor.  
Seek immediate medical help for blistering or open wounds.

#### After eye contact:

Protect unexposed eye.  
Rinse/flush exposed eye(s) gently using water for 15-20 minutes.  
Remove contact lens(es) if able to do so during rinsing.  
Seek medical attention immediately.

#### After swallowing:

Rinse mouth thoroughly.  
Do not induce vomiting.  
Have exposed individual drink sips of water or milk.  
Call for medical help immediately.

#### 4.2 Most important symptoms and effects, both acute and delayed

Contact can severely irritate and burn the skin with rash and blisters.  
Can irritate and burn the eyes with possible eye damage.  
Can irritate the nose, throat and lungs causing coughing, wheezing, and/or shortness of breath.  
Exposure can cause headache, dizziness, nausea, and vomiting.  
Chronic inhalation or ingestion of silver salts may cause argyria characterized by a permanent blue-gray discoloration of the eyes, skin, mucous membranes, and internal organs.

#### 4.3 Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician.  
Note to physician: Treat symptomatically.  
If blue colouring appears (lips, ear-lobes, finger-nails), give oxygen treatment as quickly as possible.  
Contains silver nitrate. Consult literature for specific antidotes.

### 5 Firefighting measures

#### 5.1 Extinguishing media

##### Suitable extinguishing agents:

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

**For safety reasons unsuitable extinguishing agents:** None

#### 5.2 Special hazards arising from the substance or mixture:

This material is an oxidizer; it greatly increases the burning rate of combustible materials.

#### 5.3 Advice for firefighters

##### Protective equipment:

Use NIOSH-approved respiratory protection/breathing apparatus.  
Wear protective clothing and equipment.

#### 5.4 Additional information:

Move product containers away from fire or keep cool with water spray as a protective measure, where feasible.  
Do not allow fire protection water to enter sewer or discharge to open water.

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Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

This material is very toxic to aquatic life with long lasting effects.

## 6 Accidental release measures

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

Wear protective equipment.

Keep away from combustibles.

Avoid contact with skin, eyes and clothing.

Avoid dust formation.

Avoid contact with skin and eyes, and clothing.

Use respiratory protective device against the effects of fumes/dust/aerosol.

Ensure adequate ventilation.

Keep away from ignition sources.

Protect from heat.

Stop the spill, if possible.

Contain spilled material by diking or using inert absorbent.

Transfer to a disposal or recovery container.

### 6.2 Environmental precautions:

Collect contaminated soil for characterization per Section 13.

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: None

## 7 Handling and storage

### 7.1 Precautions for safe handling:

Keep away from heat and direct sunlight.

Any unavoidable deposit of dust must be regularly removed.

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

Store locked up.

The product has a corrosive effect on steel and aluminum.

Store away from foodstuffs.

Protect from heat and direct sunlight.

Provide ventilation for containers.

Store in cool, dry conditions in well sealed containers.

Keep container tightly sealed.

Do not store near combustible materials or strong bases.

### 7.3 Specific end use(s):

No further relevant information available.

## 8 Exposure controls/personal protection

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### 8.1 Control parameters:

7761-88-8, Silver nitrate, OSHA PEL: TWA (as Ag) 0.01 mg/m<sup>3</sup>.

7761-88-8, Silver nitrate, NIOSH REL: TWA (as Ag) 0.01 mg/m<sup>3</sup>.

7761-88-8, Silver nitrate, ACGIH: TWA (as Ag) 0.01 mg/m<sup>3</sup>.

7761-88-8, Silver nitrate, IOELV (EU): (as Ag) 0,01 mg/m<sup>3</sup>.

### 8.2 Exposure controls

#### Appropriate Engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling.

Provide exhaust ventilation or other engineering controls to keep the airborne dust concentrations below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.

#### Respiratory protection:

Not required under normal conditions of use.

Use suitable respiratory protective device when high concentrations are present.

For spills, respiratory protection may be advisable.

Use suitable respiratory protective device when airborne dust formed.

#### Protection of skin:

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

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

Wear protective equipment to prevent contact with skin, eyes, or hair.

#### Eye protection:

Safety glasses with side shields or goggles.

#### General hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from food, beverages and feed sources.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Do not inhale gases/fumes/dust/mist/vapor/aerosols.

Avoid contact with the eyes and skin.

Laundry clothing that has come in contact with the substance before reuse.

## 9 Physical and chemical properties

<b>Appearance (physical state, color):</b>	White powder	<b>Explosion limit lower:</b> <b>Explosion limit upper:</b>	Not determined Not determined
<b>Odor:</b>	Odorless	<b>Vapor pressure at 20°C:</b>	Not applicable
<b>Odor threshold:</b>	Not determined	<b>Vapor density:</b>	Not applicable
<b>pH-value:</b>	~6 (1% soln/water)	<b>Relative density:</b>	Not determined
<b>Melting/Freezing point:</b>	212 C	<b>Solubilities:</b>	2,192 g/l

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<b>Boiling point/Boiling range:</b>	Not applicable	<b>Partition coefficient (n-octanol/water):</b>	Not determined
<b>Flash point (closed cup):</b>	Not applicable	<b>Auto/Self-ignition temperature:</b>	Not determined
<b>Evaporation rate:</b>	Not applicable	<b>Decomposition temperature:</b>	250-440 C
<b>Flammability (solid, gaseous):</b>	Oxidizer	<b>Viscosity:</b>	a. Kinematic: Not determined b. Dynamic: Not determined
<b>Density at 20°C:</b>	4,35 g/cm <sup>3</sup>		
<b>Specific Gravity</b>	4.35		

**10 Stability and reactivity****10.1 Reactivity:**

Nonreactive under normal conditions.

**10.2 Chemical stability:**

No decomposition if used and stored according to specifications.

Becomes gray or grayish-black on exposure to light in the presence of organic matter.

**10.3 Possibility hazardous reactions:**

Material can react violently with combustible materials, reducing agents, aqueous ammonia.

Hazardous reactions or instability may occur under certain conditions of storage or use, such as contact with combustible materials resulting in causing or intensifying fire.

Reacts with alcohol to form explosive fulminate.

Risk of dust explosion if enriched with fine dust in the presence of air.

Corrosive action on metals.

**10.4 Conditions to avoid:**

Keep ignition sources away - Do not smoke.

Keep away from heat and direct sunlight.

**10.5 Incompatible materials:**

Contact with acids liberates toxic gases.

**10.6 Hazardous decomposition products:**

Toxic metal compounds.

Toxic metal oxide smoke.

Nitrogen oxides.

**11 Toxicological information****11.1 Information on toxicological effects:****Acute Toxicity:****Oral:**

1173 mg/kg LD50 orl-rat (Silver nitrate 7761-88-8):

**Chronic Toxicity:** No additional information.

**Skin corrosion/irritation:**

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Caustic effect on skin and mucous membranes.

**Serious eye damage/irritation:**

Strong caustic effect.

**Respiratory or skin sensitization:**

No sensitizing effects known.

**Carcinogenicity:****Not listed as a carcinogen (ACGIH, IARC, NTP):** Silver Nitrate**Germ cell mutagenicity:** No additional information.**Reproductive toxicity:** No additional information.**STOT-single and repeated exposure:** No additional information.**Additional toxicological information:** No additional information.**12 Ecological information****12.1 Toxicity:**

Fish: LC50 (96h) P. promelas (aged 1-4 days) (7761-88-8): 1.2 µg dissolved Ag/L

Fish: LC50 (96h) P. promelas (aged 41 days) (7761-88-8): 10.4 µg dissolved Ag/L

Fish: EC10 (mortality)196 day O. mykiss (7761-88-8) : 0.17 ug dissolved Ag/L

**12.2 Persistence and degradability:**

Inorganic product, is not removable from water by biological cleaning process.

**12.3 Bioaccumulative potential:**

May be accumulated in organism.

**12.4 Mobility in soil:**

No further relevant information available.

**General notes:**

The product contains heavy metals. Avoid transfer into the environment. Specific preliminary treatments are necessary. Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment can not be excluded. 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. 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:** No additional information.**vPvB:** No additional information.**12.6 Other adverse effects:**

No further relevant information available.

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Product/containers must not be disposed together with household garbage. Do not allow product to reach sewage system or open water. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Consult federal state/ provincial and local regulations regarding the proper disposal of waste material that may incorporate some amount of this product. Can be reused after reprocessing.

**14 Transport information**

**14.1 UN Number:** 1493  
ADR, ADN, DOT, IMDG, IATA

**14.2 UN Proper shipping name:** Silver Nitrate.  
ADR, ADN, DOT, IMDG, IATA

**14.3 Transport hazard classes:**  
ADR, ADN, DOT, IMDG, IATA

**Class:** 5  
**Label:** 5.1 Oxidizing substances  
**LTD. QTY:** 1 kg.

**US DOT**

**Limited Quantity Exception:** None

**Bulk:**

**RQ (if applicable):** None  
**Proper shipping Name:** Silver Nitrate.  
**Hazard Class:** 5  
**Packing Group:** II.  
**Marine Pollutant (if applicable):** Yes  
**Comments:** None

**Non Bulk:**

**RQ (if applicable):** None  
**Proper shipping Name:** Silver Nitrate.  
**Hazard Class:** 5  
**Packing Group:** II.  
**Marine Pollutant (if applicable):** Yes  
**Comments:** None



**14.4 Packing group:** II.  
ADR, ADN, DOT, IMDG, IATA

**14.5 Environmental hazards:** Yes.

**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 organometallic compounds).

**14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** Not applicable.



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<b>Transport category:</b>	2.
<b>Tunnel restriction code:</b>	E.
<b>UN "Model Regulation":</b>	1493, Silver Nitrate, 5, II

**15 Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture.****North American****SARA****Section 313 (specific toxic chemical listings):**

7761-88-8 Silver compounds (Silver nitrate) [313c].

**Section 302 (extremely hazardous substances):** None of the ingredients are listed.**CERCLA (Comprehensive Environmental Response, Clean up and Liability Act) Reportable****Spill Quantity:**

7761-88-8 Silver Nitrate 1 lb.

**TSCA (Toxic Substances Control Act):****Inventory:** All ingredients are listed.**Rules and Orders:** Not applicable.**NTP (National Toxicology Program):**

None of the ingredients are listed.

**Proposition 65 (California):****Chemicals known to cause cancer:** None of the ingredients are listed.**Chemicals known to cause reproductive toxicity for females:** None of the ingredients are listed.**Chemicals known to cause reproductive toxicity for males:** None of the ingredients are listed.**Chemicals known to cause developmental toxicity:** None of the ingredients are listed.**Canadian****Canadian Domestic Substances List (DSL):**

All ingredients are listed.

**EU****REACH Article 57 (SVHC):** None of the ingredients are listed.**Germany MAK:** Not classified.**Asia Pacific****Australia****Australian Inventory of Chemical Substances (AICS):** All ingredients are listed.**China****Inventory of Existing Chemical Substances in China (IECSC):** All ingredients are listed.

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IMDG International Maritime Code for Dangerous Goods.

IATA International Air Transport Association.

GHS Globally Harmonized System of Classification and Labelling of Chemicals.

ACGIH American Conference of Governmental Industrial Hygienists.

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

NFPA National Fire Protection Association (USA).

HMIS Hazardous Materials Identification System (USA).

WHMIS Workplace Hazardous Materials Information System (Canada).

DNEL Derived No-Effect Level (REACH).

PNEC Predicted No-Effect Concentration (REACH).

CFR Code of Federal Regulations (USA).

SARA Superfund Amendments and Reauthorization Act (USA).

RCRA Resource Conservation and Recovery Act (USA).

TSCA Toxic Substances Control Act (USA).

NPRI National Pollutant Release Inventory (Canada).

DOT US Department of Transportation.

**Summary of Phrases****Hazard statements:**

H272 May intensify fire; oxidizer.

H314 Causes severe skin burns and eye damage.

H318 Causes serious 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.

P220 Keep/Store away from clothing/combustible materials.

P221 Take any precaution to avoid mixing with combustibles.

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P264 Wash skin thoroughly after handling.

P273 Avoid release to the environment.

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

P301+330+331 If swallowed: Rinse mouth. Do not induce vomiting.

P303+361+353 If on skin (or hair): Immediately remove/take off all contaminated clothing. Rinse skin with water/shower.

P304+340 If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+351+338 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 or doctor/physician.

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P321 Specific treatment (see supplemental first aid instructions on this label).

P363 Wash contaminated clothing before reuse.

P370+378 In case of fire: Use agents recommended in section 5 for extinction.

P391 Collect spillage.

P405 Store locked up.

P501 Dispose of contents and container as instructed in Section 13.

**Manufacturer Statement:**

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

**NFPA:** 3-1-3**HMIS:** 3-1-3**Effective date:** 10.24.2014**Last updated:** 07.27.2015