



SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 06/09/2014

Version 1.3

SECTION 1. Identification

Product identifier

Product number	101512
Product name	Silver nitrate for analysis EMSURE® ACS,ISO,Reag. Ph Eur
CAS-No.	7761-88-8

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

Identified uses	Reagent for analysis
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Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation 290 Concord Road, Billerica, MA 01821, United States of America General Inquiries: +1-978-715-4321 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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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
Skin corrosion, Category 1B, H314
Acute aquatic toxicity, Category 1, H400
Chronic aquatic toxicity, Category 1, H410

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

GHS-Labeling

Hazard pictograms



Signal Word
Danger

Hazard Statements

H272 May intensify fire; oxidizer.
H314 Causes severe skin burns and eye damage.

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H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements

P210 Keep away from heat.

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.

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

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

OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS and may deviate from the GHS information.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

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

Exact percentages are being withheld as a trade secret.

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.

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.

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Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Cough, Shortness of breath, Dizziness, Unconsciousness, Diarrhea, gastric spasms, Vomiting, death

Risk of permanent damage due to staining of the cornea.

Risk of blindness!

The following applies to soluble silver compounds: only slightly absorbed via the gastrointestinal tract. Strong irritations after contact with eyes and skin.

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

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.

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

Ambient fire may liberate hazardous vapors.

Fire may cause evolution of:

nitrogen oxides

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 substance contact. Avoid inhalation of dusts.

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 empty into drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

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Pick up when dry. Conduct recycling. Clean up affected area. Avoid dust formation.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

Conditions for safe storage, including any incompatibilities

Tightly closed. Dry. Protected from light. Do not store near combustible materials.

Storage temperature: no restrictions.

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>Silver nitrate 7761-88-8</i>			
ACGIH	Time Weighted Average (TWA):	0.01 mg/m³	Expressed as: as Ag
NIOSH/GUIDE	Recommended exposure limit (REL):	0.01 mg/m³	Expressed as: as Ag
OSHA_TRANS	PEL:	0.01 mg/m³	Expressed as: as Ag
Z1A	Time Weighted Average (TWA):	0.01 mg/m³	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

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:

protective clothing

Respiratory protection

required when dusts are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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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)
Melting point	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

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Explosive properties

Not classified as explosive.

Oxidizing properties

The substance or mixture is classified as oxidizing with the category 2.

Ignition temperature

not applicable

Bulk density

ca. 2,350 kg/m³

SECTION 10. Stability and reactivity

Reactivity

has a corrosive effect

Chemical stability

Sensitivity to light

Possibility of hazardous reactions

Risk of explosion with:

Exothermic reaction with:

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

Alcohols, arsenic, halogen-halogen compounds, nonmetals, organic nitro compounds, Sodium hydroxide, magnesium, acetylidene, hydrazine and derivatives, carbides, azides, ammonium hydroxide, ethanol, Ammonia, Nitriles, Acetylene, Aldehydes, oxidizable substances, combustible substances

Conditions to avoid

Strong heating (decomposition).

Exposure to light.

Incompatible materials

Aluminum, Mild steel

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

Target Organs

Kidney

Lungs

Mucous membranes

Skin

Eyes

Cornea

Nose

Digestive organs

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Gastro-intestinal system

head

Respiratory organs

Acute oral toxicity

LD50 rat: 1,173 mg/kg (RTECS) (Regulation (EC) No 1272/2008, Annex VI)

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 ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

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

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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 swallowing of large amounts:

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

The following applies to soluble silver compounds: only slightly absorbed via the gastrointestinal tract. Strong irritations after contact with eyes and skin.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

NOEC *Leuciscus idus* (Golden orfe): 0.011 mg/l; 96 h

OECD Test Guideline 203

flow-through test LC50 *Pimephales promelas* (fathead minnow): 0.0067 mg/l; 96 h

Analytical monitoring: yes

US-EPA

flow-through test NOEC *Pimephales promelas* (fathead minnow): 0.00037 mg/l; 28 d

OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates

semi-static test LC50 *Daphnia magna* (Water flea): 0.0069 - 0.0082 mg/l; 48 h

Analytical monitoring: yes

OECD Test Guideline 202

Toxicity to algae

IC50 *Desmodesmus subspicatus* (green algae): 0.008 mg/l; 8 d (External MSDS)

semi-static test *Pseudokirchneriella subcapitata* (green algae): 0.19 mg/l; 96 h

US-EPA

Toxicity to bacteria

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

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.

Discharge into the environment must be avoided.

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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

SECTION 15. Regulatory information

United States of America

OSHA Hazards

Oxidizer

Harmful if swallowed.

Corrosive to skin

Corrosive to eyes

Target organ effects

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

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SARA 311/312 Hazards

Fire Hazard

Acute Health Hazard

Reactivity Hazard

Acute Health Hazard

Chronic Health Hazard

SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

Ingredients

Silver nitrate

7761-88-8

100 %

SARA 302

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Ingredients

Silver nitrate

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Ingredients

Silver nitrate

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

Ingredients

Silver nitrate

Pennsylvania Right To Know

Ingredients

Silver nitrate

New Jersey Right To Know

Ingredients

Silver nitrate

California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

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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.

Full text of H-Statements referred to under sections 2 and 3.

H272	May intensify fire; oxidizer.
H314	Causes severe skin burns and eye damage.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

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 06/09/2014

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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