

Safety data sheet
According to Regulation n. 1907/2006 and Regulation 830/2015
Silver nitrate 63,5% AgNO₃



Revision n. VIII dd 01.21.2019
 Replaces revision n VII dd 06.29.2017

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

1.1 Product Identifier

Chemical name Silver nitrate (AgNO₃)
 C.A.S. Registry Number 7761-88-8
 EINECS number 231-853-9
 CEE 047-001-00-2
 Molecular weight 169,87
 Chemical Formula AgNO₃

1.2 Pertinent use of the substance and recommended use

Additive for electroplating baths, laboratory reagent, pharmaceutical industry, photographic industry

1.3 Informations about the furniture of the safety data sheet

Name FAGGI ENRICO S.P.A.
 Address Via Majorana, 101/103 50019 Sesto Fiorentino FI
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 Competent person responsible for the safety data sheet lorenzo.magaldi@faggi.it
 Emergency telephone number Tel. 0557947819 Centro Antiveleni di Firenze
 Registration number 01-2119513705-43

1.4

1.5 Registration number

2. HAZARDS IDENTIFICATION

2.1 Classification of the mixture in accordance with Regulation (CE) n. 1272/2008

Hazard classes	Category codes	Hazard statements
Ox.Sol.	2	H272
Met. Corr.	1	H290
Skin corr.	1B	H314
Aquatic acute	1	H400
Aquatic chronic	1	H410

2.2 Label elements

Pittogrammi



Warnings

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

Safety Advice

P234 Keep only in original container

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P260	Do not breathe dust/fumes/gas/mist/vapours/spray.
P303+361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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
P405	Store locked up

- **Further Informations** In combination with ammonia nitrate of silver can form unstable compounds such as silver fulminate
- Results of PBT** **PBT** : not applicable
- e vPvB** **vPvB** : not applicable

3. **COMPOSITION/INFORMATION ON INGREDIENTS**

3.1 **Substance: Silver nitrate 100%**

CAS number	7761-88-8
EINECS number	231-853-9
CE number	047-001-00-2
IUPAC number	-

4. **FIRST-AID MEASURES**

4.1 **Description of the first-aid measures**

Inhalation	Bring to fresh air immediately. If not breathing provide artificial respiration or oxygen. Call immediately a doctor for medical treatment
Ingestion	Consult a doctor immediately for medical treatment. Rinse out mouth. Give plenty of water. Do not induce vomiting
Skin contact	Wash immediately with plenty of water and soap. Remove contaminated clothes
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes after removing contact lenses, occasionally lifting the upper and lower eyelids. Consult an ophthalmologist

Recommendations:

- **Need for immediate medical attention** YES
- **Possibility of delayed effects subsequent the exposition** YES
- **Move the exposed individual from the area to fresh air** YES
- **Remove clothes and shoes from the individual** YES
- **Modality of manipulation of contaminated garments** With gloves
- **For lenders of first aid, wear the DPI** YES

4.2 **Main symptoms and effects both acute and delayed**

After inhalation or ingestion: sore throat, cough, burning sensation. Breath wheezing, difficulty breathing. Lips and nails and blue skin. Dizziness, headaches, nausea. Confusion, convulsions, unconsciousness. Symptoms may be delayed.

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- Abdominal pain, burning sensation. Shock or collapse.
After contact with skin: pain, redness, burns, blisters.
In case of eye contact: redness, pain. Severe deep burns. Loss of view
- 4.3 Indication of the possible urgency to consult immediately a doctor or of special treatments**
A doctor should be consulted immediately. Clean the whole contaminated area of the body, including the scalp and nails.
- 5. FIREFIGHTING MEASURES**
- 5.1 Extinguishing media**
Suitable extinguishing media CO₂, powder or water spray.
Unsuitable extinguishing media None in particular
- 5.2 Special hazards arising from the substance or the mixture**
The substance decomposes on heating producing toxic fumes including nitrogen oxides. It is a strong oxidant and reacts violently with ammonia, combustible materials and reducing. The substance, although it is not combustible, it may cause or contribute to the combustion of other subjects
- 5.3 Advice for firefighters**
Avoid that the water used to extinguish the fire goes into sewage system, aquifers or to superficial waters.
- General informations
- Equipment Normal garments for firefighting, as an air breathing apparatus (ref. standard EN 137) or fresh air hose breathing, protective clothing for welding (EN 469), flame resistant gloves (EN659) and fireman's boots (HOA29 or A30)
- 6. ACCIDENTAL RELEASE MEASURES**
- 6.1 Personal precautions, protective equipment and emergency procedures**
- 6.1.1. For non-emergency personnel**
Warn everybody: danger of intoxication - Evacuate the area contaminated - Alert emergency internal workers or firefighters
- 6.1.2. For emergency responders**
Wear:
-mask with ABEK P2 filter or breathing apparatus,
- gloves conform to the standards EN420 E374
-protective clothing flame-resistant and acid resistant according to UNI EN 13034:2006 type and 6 UNI EN ISO 11612:2009 A1-B1-C1-E1 regulations
- protective equipment for eyes conform to Directive 89/686 / EEC and the standard EN166: 2001
Keep away any ignition sources if you can do it without risk. Provide adequate ventilation. Avoid coming into contact with the substance or handling the containers without the adequate protections. Isolate the area until a complete dispersion of the substance.
- 6.2 Environmental precautions**
Prevent product from going into sewers and water sources or soil. In case of pollution of rivers, lakes or drains, inform appropriate authorities in accordance with local laws. In case of fire fire-fighting water should not enter in drainage systems, soil, or surface water.

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- 6.3 Methods and materials for containment and clean-up**
- 6.3.1. Recommendations about the methods of containment of a spill**
Close the manholes. Do not absorb with sawdust or other combustible materials.
Sweep spilled substance into sealable containers; if it is appropriate pre-moisten them to prevent the spread of dust
- 6.3.2. Recommendations about the methods of reclamation of a spill**
Wash contaminated area with water
- 6.3.3. Any other informations**
None
- 6.4 Reference to other sections**
-
- 7. HANDLING AND STORAGE**
- 7.1. Precautions for safe handling**
- 7.1.1. Recommendations that allow safe handling of the substance or mixture, such as containment and measures to prevent fine as well as aerosol and dust generation**
Use the substance only in the presence of adequate ventilation and extraction and emergency eyewash nearby
- 7.1.2. Advice on general occupational hygiene**
Do not eat, drink or smoke in designated work areas. Wash hands after handling. To remove contaminated clothing and protective equipment before entering eating areas
- 7.2. Conditions for safe storage, including any incompatibilities**
- 7.2.1. Risk management decisions arising from explosive atmospheres, corrosive conditions, flammability hazards, incompatible materials, evaporative conditions, potential ignition sources**
Keep separate from acetylene, ammonia, antimony, halides and alkali
- 7.2.3. Containment of the effects of weather conditions, pressure, temperature, sunlight, humidity and vibrations**
Keep separate from acetylene, ammonia, antimony, halides and alkali
- 7.2.4. Conditions to maintain the integrity of the substance or mixture**
Close the containers immediately after use
- 7.2.5. Decisions about ventilation requirements, specific design for storage rooms or vessels, quantitative limits in storage conditions, compatibility of the packaging.**
The storage rooms must be ventilated and closed
- 7.3. Specific end use**
Electroplating industry
- 8. EXPOSURE CONTROL/ INDIVIDUAL PROTECTION**
- 8.1. Controller parameters**
ECLV TWA 0,01 mg/m³
OEL (IT) TWA 0,01 mg/m³
DNEL e PNEC : N.D.
- 8.2. Exposure controls**
- 8.2.1. Appropriate engineering controls**
Periodically carry personal environmental samples and clinical examinations

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8.2.2. Individual measures, such as personal protective equipment

Eye/face protection	Protective glasses complying with 89/686/CEE and EN166:2001 regulation
Skin protection (hands)	Protective gloves material complying with EN420 and E374 regulations
Skin protection (body)	Complete clothing with chemical protection, comply with UNI EN13034:2006 type 6 regulation
Respiratory protection	Mask with f B, P2 or P3 or ABEK filters
Thermal hazards	Protective clothing complying with the UNI EN ISO 11612: 2009 A1-B1

8.2.3. Environmental exposure controls

Prevent the spillage of cyanide-containing solutions in groundwater, soil, sewage. Provide for the closure of manholes during the displacement of the solutions. Do not store supplies in areas sewage.

9.

PROPERTIES (PHYSICAL/CHEMICAL)

9.1

Informations about the main physical and chemical properties

Aspect	White crystalline powder
Odour	No smell
Odour threshold	Not applicable
pH	From 5.6 to 6.4
Melting point/freezing point	212°C
Initial boiling point and boiling range	Decomposes
Flashpoint	Not flammable
Evaporation rate	Not applicable
Flammability solids/gases	Not flammable
Upper/lower flammability or explosive limits	Not applicable
Vapour pressure	Not applicable
Vapour density	Not applicable
Relative density	4.35 g/cm ³
Solubility/Solubilities	2160 g/l in water at 20°C
The log octanol/water partition Coefficient	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	440°C
Viscosity	Not applicable
Explosive properties	Not applicable
Oxidising properties	Oxidising

9.2.

Other informations (miscibility, solubility, fat solubility, conductivity, redox potential, radical formation potential and photocatalytic properties)

None

10.

STABILITY AND REACTIVITY

10.1

Reactivity

The product has oxidizing properties.

10.2

Chemical stability

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10.3 The product is stable
Possibility of hazardous reactions
 The impregnated wood and other organic materials of silver nitrate may ignite spontaneously when dry. The contact with ammonia can produce explosive compounds

10.4 **Conditions to avoid**
 Keep away from sunlight

10.5 **Incompatible materials**
 There are violent reactions between silver nitrate and the following substances: formaldehyde acetic anhydride, phosphorus, ammonia and ethanol, acetylene and derivatives, acrylonitrile, ammonia and sodium carbonate, ammonia and sodium hydroxide, arsenic, 1,3-butadiene, buten-3ino, chloro sulfonic acid, ethanol, phosphine.

10.6 **Hazardous decomposition products**
 The substance decomposes producing toxic fumes including nitrogen oxides (NO_x). The substance is a strong oxidant and reacts violently with combustible materials and reducing agents causing fire and explosion.

11. TOXICOLOGICAL INFORMATION

11.1 Informations about toxicological effects

Acute toxicity	Orally: LD50 1027 mg/kg Inhalation :LC50 (male and female rats; 4 h) >750 µg/m ³ Dermal : LD50 > 2000 mg/kg
Skin corrosion/irritation	Corrosive
Eye damage/irritation	Strongly irritant
Skin sensitisation or corrosion/irritation	Corrosive to the respiratory tract
Germ cell mutagenicity	Mutagenic in some animals. No known effects on human
Carcinogenity	Not carcinogenic
Reproductive toxicity	Not toxic for reproduction
Specific target organ toxicity (STOT)-single exposure	Oral cavity, pharynx, esophagus and stomach (ingestion)
Specific target organ toxicity (STOT)-repeated exposure	Skin (Corrosion)
Aspiration hazard	Skin (argyria) Irritation

11.2 **Specific target organ toxicity**
 The substance can be absorbed by inhalation of its aerosol or by ingestion

11.3 **Symptoms related to the physical, chemical and toxicological characteristic**
 The symptoms of intoxication by inhalation include headache, dizziness, difficulty with respiratory irritation and possible alterations of the nasal cavity, nausea, vomiting, anxiety, excitement, burning sensation in the mouth and throat, fainting.

11.4. **Delayed, immediate and chronic effects from short and long term**

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exposure

acute effects

The substance is corrosive to the eyes, the skin and the respiratory tract.

chronic effects

Inhalation or ingestion can lead to generalized argyria, staining gray eyes and skin and brown fingernails

11.5.

Interactive effects

There are no specific known effects.

11.6.

In the absence of specific data

Mutagenic effects were observed experimentally in animals; there are no data for man. There are no data on reproductive toxicity effects.

11.7.

Other informations

None

12.

ECOLOGICAL INFORMATIONS

Aquatic Toxicity

LC50 <0.1 (48h) mg / l
 (Daphnia)

LC50 <1.0 (48h) mg / l (fish)

Persistence and degradability

Non-degradable

Bioaccumulation potential

Data are not available

Mobility in soil

Data are not available

Results of PBT e vPvB

Data are not available

Other adverse effects

Very toxic to aquatic organisms

13.

DISPOSAL CONSIDERATIONS

13.1.

Waste treatment methods

This product and its packaging must be disposed of in licensed facilities. The solutions for disposal may be neutralized with lime or sodium carbonate

14.

TRANSPORT INFORMATIONS

ONU number

1493

Name

Silver nitrate

Hazard class

5.1

Pack group

II

Environmental hazards

YES

Special precautions for user

approved packaging

15.

REGULATORY INFORMATION

15.1

Legislation

Applicability

Reg. (CE) 1907/2006/CE Reach

YES

Reg. (CE) 1272/2008 CLP and subsequent amendments and addenda

YES

Reg. (CE) 2037/2000 "Substances that deplete the ozone layer"

NO

Reg. (CE) 850/2004 "The persistent organic pollutants"

NO

Reg. (CE) 689/2008 "The export and import of dangerous chemicals"

NO

Substance listed in Annex I 2012/18/UE cd Seveso

YES

D.lgs 81/2008 Uniform Occupational Health and Safety

YES

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	Code	
	Direttiva 2014/103/UE "Adr"	NO
16.	15.2 Chemical Safety Assessment	
	A chemical safety assessment has not been carried out	
	OTHER INFORMATIONS	
	16.1 Changes as compared to the previous version	
	Modified section 1	
	16.2 Legend to abbreviations and acronyms	
	ADR: European Agreement on the international carriage of goods by road GHS: Globally Harmonised System of Classification and Labelling EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstract Service	
	16.3 Bibliographical references and data sources	
	ECHA substance data bank: http://echa.europa.eu/web/guest/information-on-chemicals/registered-substances	
	Platform ESIS http://esis.jrc.ec.europa.eu	
16.5. Advice on any training appropriate for workers to ensure protection of human health and the environment		
<ul style="list-style-type: none">• Training sessions on Chemical Risk pursuant to Legislative Decree 81/08 Title IX hazardous substances • Training sessions on DPI		
16.6. Other informations		
Not available		