Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 10.03.2023 Version number 2.00 (replaces version 1.00) Revision: 10.03.2023

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

· **Product identifier**

· **Trade name: Silver nitrate, API**

· **Article number:** 2081
· **CAS Number:**
7761-88-8
· **EC number:**
231-853-9
· **Index number:**
047-001-00-2
· **Registration number** The substance is exempt from REACH-registration.
· **Relevant identified uses of the substance or mixture and uses advised against**
· **Application of the substance / the mixture**
Ingredient for pharmaceutical drugs or active pharmaceutical ingredient.
· **Uses advised against** No relevant information available.

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
CAELO
Caesar & Loretz GmbH
Herderstr. 31
D-40721 Hilden
GERMANY

· **Further information obtainable from:**
E-mail: info@caelo.de
Tel.: +49210349940 (during regular opening hours)
· **Emergency telephone number:**
Poison Information Center Bonn
Venusberg-Campus 1, 53127 Bonn
Tel: +49 (0) 228-192400

* 2 Hazards identification

· **Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**

Ox. Sol. 2	H272 May intensify fire; oxidiser.
Skin Corr. 1B	H314 Causes severe skin burns and eye damage.
Aquatic Acute 1	H400 Very toxic to aquatic life.
Aquatic Chronic 1	H410 Very toxic to aquatic life with long lasting effects.

· **Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the CLP regulation.

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· **Hazard pictograms**

GHS03 GHS05 GHS09

· **Signal word** Danger
· **Hazard statements**
H272 May intensify fire; oxidiser.
H314 Causes severe skin burns and eye damage.
H410 Very toxic to aquatic life with long lasting effects.
· **Precautionary statements**
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.
P321 Specific treatment (see on this label).
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Determination of endocrine-disrupting properties** Not applicable.

3 Composition/information on ingredients

· **Substances**
· **CAS No. Description**
CAS: 7761-88-8 silver nitrate
· **Identification number(s)**
· **EC number:** 231-853-9
· **Index number:** 047-001-00-2

4 First aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:**
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.

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· **After skin contact:**
Take off contaminated clothes and shoes, wash immediately with plenty of water and soap.
Immediately wash with polyethylene glycol 400.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:**
Drink plenty of water.
Do not induce vomiting; call for medical help immediately.
· **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures
· **Extinguishing media**
· **Suitable extinguishing agents:**
All regular extinguishing media can be used.
Use fire extinguishing methods suitable to surrounding conditions.
· **Special hazards arising from the substance or mixture**
Not combustible but oxidant. In case of fire dangerous vapours/ gases can be generated:
Nitrose Gase
· **Advice for firefighters**
· **Protective equipment:** In case of fire wear suitable protective clothes and respiratory protection.
· **Additional information**
Prevent from entering into drains. Fire residues must be disposed in accordance with official regulations.

6 Accidental release measures
· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Avoid contact with the substance.
· **Environmental precautions:**
Clean up floor with tenside containing water thoroughly.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Take up dry.
Dispose contaminated material as waste according to item 13.
· **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.

7 Handling and storage
· **Precautions for safe handling** Thorough dedusting.
· **Information about fire - and explosion protection:** No special measures required.

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· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Store at a dry and well-ventilated place.
Tightly closed. Store at a dry place. At room temperature (+15°C to +25°C).
Do not store in metal containers.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Protect from exposure to the light.
Keep away from heat sources.
· **Storage class:** TRHS 510: 5.1 A Highly oxydising substances
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Control parameters**
· **Ingredients with limit values that require monitoring at the workplace:**
CAS: 7761-88-8 silver nitrate
OEL Long-term value: 0.01 mg/m³
as Ag; IOELV
· **Additional information:** The lists valid during the making were used as basis.

· **Exposure controls**
· **Appropriate engineering controls** No further data; see item 7.
· **Individual protection measures, such as personal protective equipment**
· **General protective and hygienic measures:**
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.
· **Respiratory protection:** Dust protection mask.
· **Hand protection** Protective gloves
· **Material of gloves**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
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**
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** Tightly sealed goggles

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Physical state**	Solid
· **Colour:**	Colourless
· **Odour:**	Odourless
· **Odour threshold:**	Not determined.
· **Melting point/freezing point:**	212 °C
· **Boiling point or initial boiling point and boiling range**	444 °C
· **Flammability**	Product is not flammable.
· **Lower and upper explosion limit**	
· **Lower:**	Not determined.
· **Upper:**	Not determined.
· **Flash point:**	Not applicable.
· **Decomposition temperature:**	Not determined.
· **pH (100 g/l) at 20 °C**	5.4–6.4
· **Viscosity:**	
· **Kinematic viscosity**	Not applicable.
· **Dynamic:**	Not applicable.
· **Solubility**	
· **water at 20 °C:**	2150 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/cm³
· **Relative density**	Not determined.
· **Vapour density**	Not applicable.
· **Particle characteristics**	Not determined
· **Other information**	
· **Appearance:**	
· **Form:**	Crystalline
· **Important information on protection of health and environment, and on safety.**	
· **Auto-ignition temperature:**	Not determined.
· **Explosive properties:**	Product does not present an explosion hazard.
· **Change in condition**	
· **Evaporation rate**	Not applicable.
· **Information with regard to physical hazard classes**	
· **Explosives**	Void
	Void
· **Flammable gases**	Void
	Void

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· **Aerosols**	Void
	Void
· **Oxidising gases**	Void
	Void
· **Gases under pressure**	Void
	Void
· **Flammable liquids**	Void
	Void
· **Flammable solids**	Void
	Void
· **Self-reactive substances and mixtures**	Void
	Void
· **Pyrophoric liquids**	Void
	Void
· **Pyrophoric solids**	Void
	Void
· **Self-heating substances and mixtures**	Void
	Void
· **Substances and mixtures, which emit flammable gases in contact with water**	Void
	Void
· **Oxidising liquids**	Void
	Void
· **Oxidising solids**	May intensify fire; oxidiser.
	Void
· **Organic peroxides**	Void
	Void
· **Corrosive to metals**	Void
	Void
· **Desensitised explosives**	Void
	Void

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** Processing temperature over 5 °C.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** Nitrogen oxides

11 Toxicological information

· **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 1,173 mg/kg (rat)

· **Skin corrosion/irritation** Causes severe skin burns and eye damage.

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· **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
· **Respiratory or skin sensitisation**
Burnings.
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** Based on available data, the classification criteria are not met.
· **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.
· **Information on other hazards**
· **Endocrine disrupting properties**
On the basis of the available data, the substance does not meet the criteria for the identification of substances having properties of interference with the endocrine system, in accordance with Article 59, paragraph 1 of the REACH Regulation and the criteria established in the Delegated Regulation (EU) 2017 / 2100 of the Commission or in Commission Regulation (EU) 2018/605.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:**
LC50 0.029 mg/L /96h (fish: leuciscus idus)
0.006 mg/L /96h (fish: oncorhynchus mykiss)
EC50 0.002 mg/L /48h (Daphnia magna)
IC50 0.002 mg/L /8d (Algae)
EC10 0.006 mg/L /16h (bacteria: pseudomonas putida)
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Endocrine disrupting properties**
Based on the available data, the substance does not meet the criteria for the identification of substances with properties affecting the endocrine system according to Article 59(1) of the REACH Regulation and the criteria of the Commission Delegated Regulation (EU) 2017/2100 or in the Commission Regulation (EU) 2018/605.
The product does not contain substances with endocrine disrupting properties.
· **Other adverse effects**
· **Remark:** Very toxic for fish
· **Additional ecological information:**
· **General notes:**
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 unneutralised.
Danger to drinking water if even extremely small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.

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Very toxic for aquatic organisms

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packaging:**
· **Recommendation:** Disposal must be made according to local regulations.

14 Transport information

· **UN number or ID number**
· **ADR, IMDG, IATA** UN1493
· **UN proper shipping name**
· **ADR** 1493 SILVER NITRATE, ENVIRONMENTALLY HAZARDOUS
· **IMDG** SILVER NITRATE
· **IATA** Silver nitrate
· **Transport hazard class(es)**

· **ADR, IMDG, IATA**
· **Class** 5.1 Oxidising substances.
· **Label** 5.1
· **Packing group**
· **ADR, IMDG, IATA** II
· **Environmental hazards:** Environmentally hazardous substance, solid
· **Special marking (ADR):** Symbol (fish and tree)
· **Special precautions for user** Warning: Oxidising substances.
· **Hazard identification number (Kemler code):** 50
· **EMS Number:** F-A,S-Q
· **Segregation groups** Heavy metals and their salts (including their organometallic compounds)
· **Maritime transport in bulk according to IMO instruments** Not applicable.

· **Transport/Additional information:**

· **ADR**
· **Limited quantities (LQ)** 1 kg
· **Transport category** 2
· **Tunnel restriction code** E

· **IMDG**
· **Limited quantities (LQ)** 1 kg
· **UN "Model Regulation":** UN 1493 SILVER NITRATE, 5.1, II, ENVIRONMENTALLY HAZARDOUS

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15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)** Not listed
· **REGULATION (EC) No 1907/2006 ANNEX XVII** Not listed
· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**
Substance is not listed.

· **National regulations:**
· **Storage of hazardous substances in in nonstationary vessels (TRGS 510) (Germany)**
TRHS 510: 5.1 A Highly oxydising substances
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

The information provided is based on our current level of knowledge. This MSDS has been compiled and is exclusively for this product intended.
· **Reasons for alterations** This version replaces all old versions.
· **Date of previous version:** 10.03.2023
· **Version number of previous version:** 1.00
· **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)
MAL-Code: Måleteknisk Arbejdshygiejnisk Luftbehov (Regulation for the labeling concerning inhalation hazards, Denmark)
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
Skin Corr. 1B: Skin corrosion/irritation – 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.**