

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II as amended 2015/830.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name: Silver Nitrate 0.1 mol/l

Product No. 4681

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

Identified uses: For Laboratory, Research or Manufacturing Use.

Uses advised against: Not determined.

1.3 Details of the supplier of the safety data sheet

Avantor Performance Materials Poland S.A.
Sowinskiego 11str., 44-101 Gliwice,
Poland

Telephone: 48 32 239-20-00
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Contact person: Product Information Compliance
E-mail: export@avantormaterials.com

E-mail address of person responsible for this SDS: SDS@avantormaterials.com

1.4 Emergency telephone number: CHEMTREC: (44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

The product has been classified according to the legislation in force.

Classification according to Regulation (EC) No 1272/2008 as amended.

Health Hazards

Skin corrosion	Category 1B	H314: Causes severe skin burns and eye damage.
Serious eye damage	Category 1	H318: Causes serious eye damage.

Environmental Hazards

Acute hazards to the aquatic environment	Category 1	H400: Very toxic to aquatic life.
Chronic hazards to the aquatic environment	Category 1	H410: Very toxic to aquatic life with long lasting effects.

2.2 Label Elements

Contains:

Silver nitrate



Signal Word:

Danger

Hazard Statement(s): H314: Causes severe skin burns and eye damage.
 H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention: 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.
 P310: Immediately call a POISON CENTER/doctor.
 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.
 P391: Collect spillage.

Disposal: P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards No data available.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical name	Concentration	CAS-No.	EC No.	REACH Registration No.	M-Factor:	Notes
Silver nitrate	25 - <50%	7761-88-8	231-853-9	01-2119513705-43-0014	No data available.	#

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

This substance has workplace exposure limit(s).

Classification

Chemical name	Classification	Notes
Silver nitrate	Ox. Sol. 2 H272, Skin Corr. 1B H314, Aquatic Acute 1 H400, Aquatic Chronic 1 H410	No data available.

The full text for all H-statements is displayed in section 16.

CLP: Regulation No. 1272/2008.

SECTION 4: First Aid Measures

General: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

4.1 Description of first aid measures

Inhalation: Move to fresh air.

Skin Contact: Remove contaminated clothing and wash the skin thoroughly with soap and water after work.

Eye contact: Flush thoroughly with water. If irritation occurs, get medical assistance.

Ingestion: Rinse mouth thoroughly.

4.2 Most important symptoms and effects, both acute and delayed: No data available.

4.3 Indication of any immediate medical attention and special treatment needed

Hazards: No data available.

Treatment: No data available.

SECTION 5: Firefighting Measures

General Fire Hazards: Move containers from fire area if you can do so without risk. In case of fire and/or explosion do not breathe fumes.

5.1 Extinguishing media
Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture: None known.

5.3 Advice for firefighters
Special fire fighting procedures: In case of fire and/or explosion do not breathe fumes.

Special protective equipment for firefighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

SECTION 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures: See Section 8 of the SDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorised personnel away.

6.2 Environmental Precautions: Avoid release to the environment. Prevent further leakage or spillage if safe to do so.

6.3 Methods and material for containment and cleaning up: Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Dyke far ahead of larger spill for later recovery and disposal.

6.4 Reference to other sections: No data available.

SECTION 7: Handling and Storage:

7.1 Precautions for safe handling: Use personal protective equipment as required. Wear protective gloves/protective clothing/eye protection/face protection. Remove contaminated clothing and wash the skin thoroughly with soap and water after work. See Section 8 of the SDS for Personal Protective Equipment. Do not eat, drink or smoke when using the product. Wash at the end of each work shift and before eating, smoking or using the toilet.

7.2 Conditions for safe storage, including any incompatibilities: Store in cool, dry place.

7.3 Specific end use(s): No data available.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters Occupational Exposure Limits

Chemical name	Type	Exposure Limit Values	Source
Silver nitrate - as Ag	TWA	0,01 mg/m ³	UK. EH40 Workplace Exposure Limits (WELs) (2007)
	TWA	0,01 mg/m ³	EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU (12 2009)

DNEL-Values

Critical component	Type	Route of Exposure	Health Warnings	Remarks

PNEC-Values

Critical component	Environmental compartment	PNEC-Values
Silver nitrate	Aquatic (marine water)	0,86 µg/l
	Sediment (marine water)	438,13 mg/kg
	Sewage treatment plant	0,025 mg/l
	Sediment (freshwater)	438,13 mg/kg
	Soil	1,41 mg/kg
	Aquatic (freshwater)	0,04 µg/l

8.2 Exposure controls

Appropriate Engineering Controls: No special requirements under ordinary conditions of use and with adequate ventilation.

Individual protection measures, such as personal protective equipment

General information: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Eye/face protection: Wear safety glasses with side shields (or goggles).

**Skin protection
Hand Protection:** Material: Chemical resistant gloves

Other:	Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.
Respiratory Protection:	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Hygiene measures:	Do not eat, drink or smoke when using the product. Wash hands before breaks and immediately after handling the product.
Environmental Controls:	No data available.

SECTION 9: Physical And Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state:	Liquid
Form:	Liquid
Colour:	Colourless
Odour:	Odourless
Odour Threshold:	No data available.
pH:	No data available.
Freezing point:	No data available.
Boiling Point:	100 °C
Flash Point:	No data available.
Evaporation Rate:	No data available.
Flammability (solid, gas):	No data available.
Flammability limit - upper (%)	No data available.
Flammability limit - lower (%)	No data available.
Vapour pressure:	No data available.
Vapour density (air=1):	No data available.
Density:	2,3 g/cm ³ (20 °C)
Relative density:	No data available.
Solubility(ies)	
 Solubility in Water:	No data available.
 Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Autoignition Temperature:	No data available.
Decomposition Temperature:	No data available.
Viscosity:	No data available.
Explosive properties:	No data available.
Oxidising Properties:	No data available.

SECTION 10: Stability and Reactivity

10.1 Reactivity:	No dangerous reaction known under conditions of normal use.
10.2 Chemical Stability:	Material is stable under normal conditions.
10.3 Possibility of Hazardous Reactions:	Hazardous polymerization does not occur.

10.4 Conditions to Avoid: No special precautions.

10.5 Incompatible Materials: None known.

10.6 Hazardous Decomposition Products: Not determined.

SECTION 11: Toxicological Information

Information on likely routes of exposure

Inhalation: None known or expected under normal use.

Skin Contact: Causes severe skin burns.

Eye contact: Causes serious eye damage.

Ingestion: No adverse effects due to ingestion are expected.

11.1 Information on toxicological effects

Acute toxicity

Oral

Product: Not classified for acute toxicity based on available data.

Specified substance(s)

Silver nitrate LD 50 (Rat): 3.702 - 3.970 mg/kg

Dermal

Product: Not classified for acute toxicity based on available data.

Specified substance(s)

Silver nitrate No data available.

Inhalation

Product: Not classified for acute toxicity based on available data.

Specified substance(s)

Silver nitrate No data available.

Repeated dose toxicity

Product: None known.

Specified substance(s)

Silver nitrate
NOAEL (Rat, Oral, 13 Weeks): 30 mg/kg
NOAEL (Rat, Oral, 30 d): 1,5 mg/kg
LOAEL (Rat, Oral, 30 d): 1,5 mg/kg
LOAEL (Rat, Oral, 13 Weeks): 125 mg/kg

Skin Corrosion/Irritation:

Product: No data available.

Specified substance(s)

Silver nitrate No data available.

Serious Eye Damage/Eye Irritation:

Product: No data available.

Specified substance(s)

Silver nitrate Irritating

Respiratory or Skin Sensitisation:

Product: Not a skin nor a respiratory sensitizer.
Specified substance(s)
Silver nitrate No data available.

Germ Cell Mutagenicity

In vitro

Product: No mutagenic components identified
Specified substance(s)
Silver nitrate No data available.

In vivo

Product: No mutagenic components identified
Specified substance(s)
Silver nitrate No data available.

Carcinogenicity

Product: This substance has no evidence of carcinogenic properties.
Specified substance(s)
Silver nitrate No data available.

Reproductive toxicity

Product: No components toxic to reproduction
Specified substance(s)
Silver nitrate No data available.

Specific Target Organ Toxicity - Single Exposure

Product: None known.
Specified substance(s)
Silver nitrate No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: None known.
Specified substance(s)
Silver nitrate No data available.

Aspiration Hazard

Product: Not classified
Specified substance(s)
Silver nitrate No data available.

Other Adverse Effects: None known.

SECTION 12: Ecological Information

General information: Contains a substance which causes risk of hazardous effects to the environment.

12.1 Toxicity

Acute toxicity

Fish

Product: No data available.

Specified substance(s)

Silver nitrate LC 50 (Fathead minnow (Pimephales promelas), 96 h): 0,00181 - 0,0111

mg/l
LC 50 (Rainbow trout, donaldson trout (*Oncorhynchus mykiss*), 96 h):
0,002936 - 0,0119 mg/l
LC 50 (Bluegill (*Lepomis macrochirus*), 96 h): 0,009 - 0,07 mg/l

Aquatic Invertebrates

Product: No data available.

Specified substance(s)

Silver nitrate
EC 50 (Water flea (*Daphnia magna*), 48 h): 0,0054 - 0,059 mg/l
EC 50 (Water flea (*Daphnia pulex*), 48 h): 0,0017 - 0,0023 mg/l
LC 50 (Water flea (*Daphnia magna*), 48 h): 0,0012 - 0,054 mg/l
LC 50 (Water flea (*Ceriodaphnia dubia*), 48 h): 0,00016 - 0,00079 mg/l

Chronic toxicity

Fish

Product: No data available.

Specified substance(s)

Silver nitrate
NOAEL (*Pimephales promelas*, 7 d): 0,729 µg/l
NOAEL (*Pimephales promelas*, 28 d): 0,37 - 1,07 µg/l
LOAEL (*Pimephales promelas*, 7 d): 1,41 µg/l
NOAEL (*Menidia beryllina*, 28 d): 130 µg/l

Aquatic Invertebrates

Product: No data available.

Specified substance(s)

Silver nitrate
EC 50 (*Daphnia pulex*, 14 d): 1,2 - 2,7 µg/l
LC 50 (*Daphnia magna*, 21 d): 4,7 µg/l
EC 50 (*Daphnia magna*, 21 d): 6,17 - 8,02 µg/l
NOAEL (*Daphnia magna*, 21 d): 3,27 µg/l
NOAEL (*Daphnia pulex*, 14 d): 3,2 µg/l

Toxicity to aquatic plants

Product: No data available.

Specified substance(s)

Silver nitrate
EC 50 (Green algae (*Scenedesmus dimorphus*), 48 h): 0,003 - 0,015 mg/l

12.2 Persistence and Degradability

Biodegradation

Product: There is no data on the degradability of this product.

Specified substance(s)

Silver nitrate
No data available.

BOD/COD Ratio

Product: Not determined.

Specified substance(s)

Silver nitrate
No data available.

12.3 Bioaccumulative Potential

Product: Not known.

Specified substance(s)

Silver nitrate Largemouth bass (*Micropterus salmoides*), Bioconcentration Factor (BCF): 200
 Plaice, sand dab (*Pleuronectes platessa*), Bioconcentration Factor (BCF): 950
 Oligocottus maculosus (Tidepool sculpins), Bioconcentration Factor (BCF): 15,1 - 79,4

12.4 Mobility in Soil: No data available.
Known or predicted distribution to environmental compartments
 Silver nitrate No data available.

12.5 Results of PBT and vPvB assessment: Not available.
 Silver nitrate No data available.

12.6 Other Adverse Effects: Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

12.7 Additional Information: No data available.

SECTION 13: Disposal Considerations

13.1 Waste treatment methods

General information: No data available.

Disposal methods: Discharge, treatment, or disposal may be subject to national, state, or local laws. Do not allow to enter drains, sewers or watercourses.

SECTION 14: Transport Information

ADR

14.1 UN Number: UN 1760
 14.2 UN Proper Shipping Name: CORROSIVE LIQUID, N.O.S.(Silver nitrate)
 14.3 Transport Hazard Class(es)
 Class: 8
 Label(s): 8
 Hazard No. (ADR): 80
 Tunnel restriction code: (E)
 14.4 Packing Group: II
 14.5 Environmental Hazards: No
 14.6 Special precautions for user: Not determined.

RID

14.1 UN Number: UN 1760
 14.2 UN Proper Shipping Name CORROSIVE LIQUID, N.O.S.
 14.3 Transport Hazard Class(es)
 Class: 8
 Label(s): 8
 14.4 Packing Group: II
 14.5 Environmental Hazards: No
 14.6 Special precautions for user: Not determined.

IMDG

14.1 UN Number:	UN 1760
14.2 UN Proper Shipping Name:	CORROSIVE LIQUID, N.O.S.(Silver nitrate)
14.3 Transport Hazard Class(es)	
Class:	8
Label(s):	8
EmS No.:	F-A, S-B
14.4 Packing Group:	II
14.5 Environmental Hazards:	No
14.6 Special precautions for user:	Not determined.

IATA

14.1 UN Number:	UN 1760
14.2 Proper Shipping Name:	Corrosive liquid, n.o.s.(Silver nitrate)
14.3 Transport Hazard Class(es):	
Class:	8
Label(s):	8
14.4 Packing Group:	II
14.5 Environmental Hazards:	No
14.6 Special precautions for user:	Not determined.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code: Not applicable

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

EU Regulations

Regulation (EC) No. 2037/2000 Substances that deplete the ozone layer: none

Regulation (EC) No. 850/2004 on persistent organic pollutants: none

Regulation (EC) No. 649/2012 Import and export of dangerous chemicals: none

Regulation (EC) No. 1907/2006 REACH Annex XIV Substance subject to authorisation, as amended:
none

Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use:
none

Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens and mutagens at work.: none

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breast feeding.: none

Directive 2012/18/EU (Seveso III): on the control of major accident hazards involving dangerous substances:

Chemical name	CAS-No.	Concentration
Silver nitrate	7761-88-8	20 - 30%

EU. Regulation No. 166/2006 PRTR (Pollutant Release and Transfer Registry), Annex II: Pollutants:
none

Directive 98/24/EC on the protection of workers from the risks related to chemical agents at work:

Chemical name	CAS-No.	Concentration
Silver nitrate	7761-88-8	20 - 30%

15.2 Chemical safety assessment: No Chemical Safety Assessment has been carried out.

SECTION 16: Other Information

Revision Information: Not relevant.

References

PBT PBT: persistent, bioaccumulative and toxic substance.
 vPvB vPvB: very persistent and very bioaccumulative substance.

Key literature references and sources for data: No data available.

Wording of the H-statements in sections 2 and 3

H272 May intensify fire; oxidiser.
 H314 Causes severe skin burns and eye damage.
 H318 Causes serious eye damage.
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.

Training information: No data available.

Issue Date: 23.04.2020

SDS No.:

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