

Safety Data Sheet

Revision date: 16.12.2022

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

1.1 Product identifier

| | |
|--------------------------------|--|
| Trade name/designation: | Silver nitrate AnalaR NORMAPUR [®] Reag. Ph.Eur., ACS |
| Product No.: | 21572 |
| CAS No.: | 7761-88-8 |
| Other means of identification: | none |

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

| | |
|---------------------------|--------------------------|
| Relevant identified uses: | General chemical reagent |
|---------------------------|--------------------------|

1.3 Details of the supplier of the safety data sheet

Singapore

VWR Singapore Pte Ltd.

| | |
|---------------------------|-------------------------|
| Street | 18 Gul Drive |
| Postal code/City | Singapore 629468 |
| Telephone | +65 6505 0760 |
| Telefax | +65 6264 3780 |
| E-mail (competent person) | SDS@avantorsciences.com |

1.4 Emergency phone number

| | |
|-----------|---|
| Telephone | +65 (0) 6505 0760 (office hours: 8 am-5 pm) |
|-----------|---|

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

| Hazard classes and hazard categories | Hazard statements |
|---|-------------------|
| Oxidising solid, category 2 | H272 |
| Substance or mixture corrosive to metals, category 1 | H290 |
| Skin corrosion, category 1B | H314 |
| Hazardous to the aquatic environment, acute, category 1 | H400 |
| Hazardous to the aquatic environment, chronic, category 1 | H410 |

2.2 Label elements

Hazard pictograms



Signal word: Danger

| Hazard statements | |
|-------------------|---|
| H272 | May intensify fire; oxidiser. |
| H290 | May be corrosive to metals. |
| H314 | Causes severe skin burns and eye damage. |
| H410 | Very toxic to aquatic life with long lasting effects. |

| Precautionary statements | |
|--------------------------|---|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P220 | Keep/Store away from clothing/combustible materials. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
| P264 | Wash ... thoroughly after handling. |
| P273 | Avoid release to the environment. |
| P234 | Keep only in original container. |
| P301+P330+P331 | IF SWALLOWED: rinse mouth. Do NOT induce vomiting. |
| P303+P361+P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. |
| P363 | Wash contaminated clothing before reuse. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P310 | Immediately call a POISON CENTER/doctor/... |
| P321 | Specific treatment (see ... on this label). |
| P370+P378 | In case of fire: Use... to extinguish. |
| P390 | Absorb spillage to prevent material damage. |
| P391 | Collect spillage. |
| P405 | Store locked up. |
| P406 | Store in a corrosive resistant/... container with a resistant inner liner. |
| P501 | Dispose of contents/container to ... |

2.3 Other hazards

none

SECTION 3: Composition / information on ingredients

3.1 Substances

| | |
|-------------------|-------------------|
| Substance name | Silver nitrate |
| Molecular formula | AgNO ₃ |
| Molecular weight | 169.87 g/mol |
| CAS No. | 7761-88-8 |

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

IF exposed: Immediately call a POISON CENTRE/doctor. If unconscious but breathing normally, place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

After inhalation

Immediately call a POISON CENTRE/doctor. Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

In case of skin contact

After contact with skin, wash immediately with plenty of water and soap. Remove contaminated, saturated clothing immediately. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

After eye contact:

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing.

In case of ingestion

Immediately call a POISON CENTRE/doctor. Do NOT induce vomiting. Rinse mouth thoroughly with water. Give nothing to eat or drink.

Self-protection of the first aider

First aider: Pay attention to self-protection!

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

no data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

The product itself does not burn.
May intensify fire; oxidiser.
Co-ordinate fire-fighting measures to the fire surroundings.

Extinguishing media which must not be used for safety reasons

no restriction

5.2 Special hazards arising from the substance or mixture

In case of fire may be liberated:
Nitrogen oxides (NO_x)

5.3 Advice for firefighters

DO NOT fight fire when fire reaches explosives.
Special protective equipment for firefighters:
Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information

Do not allow run-off from fire-fighting to enter drains or water courses.
Do not inhale explosion and combustion gases.
Use water spray jet to protect personnel and to cool endangered containers.

In case of fire: Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation.

6.2 Environmental precautions

Do not allow to enter into surface water or drains.

6.3 Methods and material for containment and cleaning up

Spilled product must never be returned to the original container for recycling. Clean contaminated articles and floor according to the environmental legislation. Collect in closed and suitable containers for disposal.

6.4 Additional information

Clear spills immediately.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid:

Inhalation

Avoid contact with eyes and skin.

Use extractor hood (laboratory).

If handled uncovered, arrangements with local exhaust ventilation have to be used.

If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means.

Protect from moisture.

7.2 Conditions for safe storage, including any incompatibilities

Recommended storage temperature: 15-25°C

Storage class: 5.1B

Keep container tightly closed and in a well-ventilated place. Keep/Store away from combustible materials.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Does not contain substances above concentration limits fixing an occupational exposure limit.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

no data available

8.2.2 Personal protection equipment

no data available

Eye/face protection

no data available

Recommendation: no data available

Skin protection

no data available

By short-term hand contact

| | |
|----------------------------------|----------------------|
| Suitable material: | NBR (Nitrile rubber) |
| Thickness of the glove material: | 0,12 mm |
| Breakthrough time:: | > 480 min |
| Recommended glove articles: | VWR 112-0998 |

By long-term hand contact

| | |
|----------------------------------|-------------------------|
| Suitable material: | NBR (Nitrile rubber) |
| Thickness of the glove material: | 0,38 mm |
| Breakthrough time:: | > 480 min |
| Recommended glove articles: | VWR 112-3717 / 112-1381 |

Respiratory protection

no data available

| | |
|--|-------------------|
| Suitable respiratory protection apparatus: | no data available |
| Recommendation: | no data available |
| Suitable material: | no data available |
| Recommendation: | no data available |

Additional information

no data available

8.2.3 Environmental exposure controls

no data available

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|----------------------|-------------------|
| (a) Appearance | |
| Physical state: | solid |
| Colour: | white |
| (b) Odour: | no data available |
| (c) Odour threshold: | no data available |

Safety relevant basic data

| | |
|--|--|
| (d) pH: | 5.4-6.4 (100 g/l; H ₂ O; 20 °C) |
| (e) Melting point/freezing point: | 210 °C |
| (f) Initial boiling point and boiling range: | 444 °C (1013 hPa) |
| (g) Flash point: | no data available |
| (h) Evaporation rate: | no data available |
| (i) Flammability (solid, gas): | not applicable |
| (j) Flammability or explosive limits | |
| Lower explosion limit: | no data available |
| Upper explosion limit: | no data available |
| (k) Vapour pressure: | no data available |
| (l) Vapour density: | no data available |
| (m) Density: | 4.35 g/cm ³ (20 °C) |
| (n) Solubility(ies) | |
| Water solubility: | 2160 g/l (20 °C) |
| (o) Partition coefficient: n-octanol/water: | 0.19 (20 °C; calculated) |
| (p) Auto-ignition temperature: | no data available |
| (q) Decomposition temperature: | 444 °C (1013 hPa) |
| (r) Viscosity | |
| Kinematic viscosity: | no data available |
| Dynamic viscosity: | no data available |
| (s) Explosive properties: | not applicable |
| (t) Oxidising properties: | May intensify fire; oxidiser. |
| (u) Particle characteristics: | no nanoform |

9.2 Other information

| | |
|------------------------|-------------------|
| Bulk density: | no data available |
| Refraction index: | no data available |
| Dissociation constant: | no data available |
| Surface tension: | no data available |
| Henry's Law Constant: | no data available |

SECTION 10: Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

no data available

10.6 Hazardous decomposition products

no data available

10.7 Additional information

no data available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute effects

Acute oral toxicity:

LD50: > 1173 mg/kg - Rat - (RTECS)

Acute dermal toxicity:

no data available

Acute inhalation toxicity:

no data available

Irritant and corrosive effects:

Primary irritation to the skin:

Causes severe skin burns and eye damage.

Irritation to eyes:

Causes serious eye damage.

Irritation to respiratory tract:

not applicable

Respiratory or skin sensitisation

In case of skin contact: not sensitising

After inhalation: not sensitising

STOT-single exposure

not applicable

STOT-repeated exposure

not applicable

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Carcinogenicity

No indication of human carcinogenicity.

Germ cell mutagenicity

No indications of human germ cell mutagenicity exist.

Reproductive toxicity

No indications of human reproductive toxicity exist.

Aspiration hazard

not applicable

Other adverse effects

no data available

Additional information

no data available

11.2 Endocrine disrupting properties:

This substance does not have endocrine disrupting properties with respect to humans.

SECTION 12: Ecological information

12.1 Ecotoxicity

Fish toxicity:

LC50: 0.0109 mg/l (96 h)

Daphnia toxicity:

EC50: 0.0029 mg/l (48 h)

LC50: 0.00156 mg/l (48 h)

Algae toxicity:

no data available

Bacteria toxicity:

no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water: 0.19 (20 °C; berechnet)

12.4 Mobility in soil:

no data available

12.5 Results of PBT/vPvB assessment

not applicable

12.6 Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to the environment.

12.7 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Appropriate disposal / Product

Dispose according to local legislation. Consult the appropriate local waste disposal expert about waste disposal.

Waste code product: 060300

Appropriate disposal / Package

Dispose according to local legislation. Handle contaminated packages in the same way as the substance itself.

Additional information

no data available

SECTION 14: Transport information

Land transport (ADR/RID)

| | | |
|------|--|--|
| 14.1 | UN-No.: | 1493 |
| 14.2 | Proper Shipping Name: | SILVER NITRATE |
| 14.3 | Class(es): | 5.1 |
| | Classification code: | O2 |
| | Hazard label(s): | 5.1 |
| 14.4 | Packing group: | II |
| 14.5 | Environmental hazards: | Dangerous for the environment |
| 14.6 | Special precautions for user: | |
| | Hazard identification number (Kemler No.): | 50 |
| | tunnel restriction code: | E |
| | | (Passage forbidden through tunnels of category E.) |

Sea transport (IMDG)

| | | |
|------|--|-------------------------------|
| 14.1 | UN-No.: | 1493 |
| 14.2 | Proper Shipping Name: | SILVER NITRATE |
| 14.3 | Class(es): | 5.1 |
| | Classification code: | |
| | Hazard label(s): | 5.1 |
| 14.4 | Packing group: | II |
| 14.5 | Environmental hazards: | Dangerous for the environment |
| | Marine pollutant: | Yes (P) |
| 14.6 | Special precautions for user: | |
| | Segregation group: | 7 |
| | EmS-No. | F-A S-Q |
| 14.7 | Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | |
| | not relevant | |

Air transport (ICAO-TI / IATA-DGR)

| | | |
|------|-------------------------------|----------------|
| 14.1 | UN-No.: | 1493 |
| 14.2 | Proper Shipping Name: | SILVER NITRATE |
| 14.3 | Class(es): | 5.1 |
| | Classification code: | |
| | Hazard label(s): | 5.1 |
| 14.4 | Packing group: | II |
| 14.5 | Special precautions for user: | |

SECTION 15: Regulatory information

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

National regulations

- Workplace Safety and Health Act
- Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order
- Environmental Protection and Management Act (EPMA) - Second Schedule, Part 1, Control of Hazardous Substances
- Maritime and Port Authority of Singapore (MPA) - Dangerous Goods, Petroleum and Explosives Regulations

SECTION 16: Other information

Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygienists
ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
AGS - Committee on Hazardous Substances (Ausschuss für Gefahrstoffe)
CLP - Regulation on Classification, Labelling and Packaging of Substances and Mixtures
DFG - German Research Foundation (Deutsche Forschungsgemeinschaft)
DNEL - Derived No Effect Level
Gestis - Information system on hazardous substances of the German Social Accident Insurance (Gefahrstoffinformationssystem der Deutschen Gesetzlichen Unfallversicherung)
IATA-DGR - International Air Transport Association-Dangerous Goods Regulations
ICAO-TI - International Civil Aviation Organization-Technical Instructions
IMDG - International Maritime Code for Dangerous Goods
KOSHA - Korea Occupational Safety and Health Agency
LTV - Long Term Value
NIOSH - National Institute for Occupational Safety and Health
OSHA - Occupational Safety & Health Administration
PBT - Persistent, Bioaccumulative and Toxic
PNEC - Predicted No Effect Concentration
RID - Regulation concerning the International Carriage of Dangerous Goods by Rail
STV - Short Term Value
SVHC - Substances of Very High Concern
vPvB - very Persistent, very Bioaccumulative

Key literature references and sources for data

This Safety Data Sheet has been prepared based on information available for public as TOXNET information, European Chemicals Agency (ECHA) substance dossier, papers from international cancer research institutes (IARC Monographs), U.S. National Toxicology Program data, U.S. Agency for Toxic Substances and Disease Control (ATSDR), PubChem websites and SDS from our raw material manufacturers.

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Additional information

Indication of changes

Implementation: Endocrine disrupting properties

If you need an explanation of the change, contact the supplier (SDS@avantorsciences.com).

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.