

SAFETY DATA SHEET

According to JIS Z 7253:2019
Revision Date 30-Jun-2020
 Version 2.03

Section 1: PRODUCT AND COMPANY IDENTIFICATION

| | |
|---------------------|-----------------------------------|
| Product name | 0.02mol/L Silver Nitrate Solution |
| Product code | 196-09535 |

| | |
|---|---|
| Manufacturer | FUJIFILM Wako Pure Chemical Corporation 1-2 Doshomachi 3-Chome Chuo-ku, Osaka 540-8605, Japan Phone: +81-6-6203-3741 Fax: +81-6-6203-5964 |
| Supplier | FUJIFILM Wako Pure Chemical Corporation 1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan Phone: +81-6-6203-3741 Fax: +81-6-6203-2029 |
| Emergency telephone number | +81-6-6203-3741 / +81-3-3270-8571 |
| Recommended uses and restrictions on use | For research purposes |

Section 2: HAZARDS IDENTIFICATION

GHS classification

Classification of the substance or mixture

Short-term (acute) hazardous to the aquatic environment
 Long-term (chronic) hazardous to the aquatic environment

Category 1
 Category 1

Pictograms



Signal word

Warning

Hazard statements

- H400 - Very toxic to aquatic life
- H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements-(Prevention)

- Avoid release to the environment

Precautionary statements-(Response)

- Collect spillage

Precautionary statements-(Storage)

- Not applicable

Precautionary statements-(Disposal)

- Dispose of contents/container to an approved waste disposal plant

Others

Other hazards

Not available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Mixture

| Chemical Name | Weight-% | Molecular weight | ENCS | ISHL No. | CAS RN |
|----------------|----------|------------------|-------|----------|-----------|
| Water | 99.66 | 18.02 | N/A | N/A | 7732-18-5 |
| Silver nitrate | 0.34 | 169.87 | (1)-8 | 公表 | 7761-88-8 |

Impurities and/or Additives : Not applicable

Section 4: FIRST AID MEASURES

Inhalation

Remove to fresh air. If symptoms persist, call a physician.

Skin contact

Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

Ingestion

Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

Protection of first-aiders

Use personal protective equipment as required.

Section 5: FIRE FIGHTING MEASURES

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

Unsuitable extinguishing media

No information available

Specific hazards arising from the chemical product

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Special extinguishing method

No information available

Special protective actions for fire-fighters

Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind.

Environmental precautions

To be careful not discharged to the environment without being properly handled waste water contaminated.

Methods and materials for contaminant and methods and materials for cleaning up

Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

Recovery, neutralization

No information available

Secondary disaster prevention measures

Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE

Handling**Technical measures**

Avoid contact with reducing agents and combustible materials. Use with local exhaust ventilation.

Precautions

Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging. Prevent leakage, overflow, and scattering. Not to generate steam and dust in vain. Seal the container after use. After handling, wash hands and face, and then gargle. In places other than those specified, should not be smoking or eating and drinking. Should not be brought contaminated protective equipment and gloves to rest stops. Deny unnecessary entry of non-emergency personnel to the handling area.

Safety handling precautions

Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Storage**Safe storage conditions****Storage conditions**

Keep container protect from light, store in well-ventilated place at room temperature (preferably cool). Keep container tightly closed.

Safe packaging material

Glass

Incompatible substances

Organic substance, Combustible materials, Reducing agent

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits

| Chemical Name | JSOH (Japan) | ISHL (Japan) | ACGIH |
|-----------------------------|----------------------------|--------------|--------------------------------|
| Silver nitrate 7761-88-8 | 0.01mg/m ³ (Ag) | N/A | TWA: 0.01 mg/m ³ Ag |

Personal protective equipment**Respiratory protection**

Protective mask

Hand protection

Protection gloves

Eye protection

protective eyeglasses or chemical safety goggles

Skin and body protection

Long-sleeved work clothes

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Form**Color**

colorless

Turbidity

clear

Appearance

liquid

Odor

No data available

Melting point/freezing point

No data available

Boiling point, initial boiling point and boiling range

No data available

Flammability

No data available

Evaporation rate:

No data available

Flammability (solid, gas):

No data available

Upper/lower flammability or explosive limits**Upper :**

No data available

Lower :

No data available

Flash point

No data available

Auto-ignition temperature:

No data available

Decomposition temperature:

No data available

pH

Nearly neutral

Viscosity (coefficient of viscosity)

No data available

Dynamic viscosity

No data available

Solubilities

water and Ethanol : at the rate of any miscible .

n-Octanol/water partition coefficient:(log Pow)

No data available

| | |
|-------------------------------------|-------------------|
| Vapour pressure | No data available |
| Specific Gravity / Relative density | No data available |
| Vapour density | No data available |
| Particle characteristics | No data available |

Section 10: STABILITY AND REACTIVITY

Stability

| | |
|----------------------------------|--|
| Reactivity | No data available |
| Chemical stability | May be altered by light. |
| Hazardous reactions | None under normal processing |
| Conditions to avoid | Extremes of temperature and direct sunlight |
| Incompatible materials | Organic substance, Combustible materials, Reducing agent |
| Hazardous decomposition products | Nitrogen oxides (NO _x), Metal oxides |

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

| Chemical Name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|----------------|-----------------|-------------|-----------------|
| Silver nitrate | 1173 mg/kg(Rat) | N/A | N/A |

| Chemical Name | Acute toxicity -oral- source information | Acute toxicity -dermal- source information | Acute toxicity -inhalation gas- source information |
|----------------|---|---|--|
| Silver nitrate | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |

| Chemical Name | Acute toxicity -inhalation vapor- source information | Acute toxicity -inhalation dust- source information | Acute toxicity -inhalation mist- source information |
|----------------|--|---|---|
| Silver nitrate | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |

Skin irritation/corrosion

| Chemical Name | Skin corrosion/irritation source information |
|----------------|---|
| Silver nitrate | Based on the NITE GHS classification results. |

Serious eye damage/ irritation

| Chemical Name | Serious eye damage/irritation source information |
|----------------|--|
| Silver nitrate | Based on the NITE GHS classification results. |

Respiratory or skin sensitization

| Chemical Name | Respiratory or Skin sensitization source information |
|----------------|--|
| Silver nitrate | Based on the NITE GHS classification results. |

Reproductive cell mutagenicity

| Chemical Name | germ cell mutagenicity source information |
|----------------|---|
| Silver nitrate | Based on the NITE GHS classification results. |

Carcinogenicity

| Chemical Name | Carcinogenicity source information |
|----------------|---|
| Silver nitrate | Based on the NITE GHS classification results. |

| Chemical Name | NTP | IARC | ACGIH | JSOH (Japan) |
|-----------------------------|-----|----------|-------|--------------|
| Silver nitrate 7761-88-8 | - | Group 2A | - | - |

Reproductive toxicity

| Chemical Name | Reproductive toxicity source information |
|----------------|---|
| Silver nitrate | Based on the NITE GHS classification results. |

STOT-single exposure

| Chemical Name | STOT -single exposure- source information |
|---------------|---|
|---------------|---|

| | |
|----------------|---|
| Silver nitrate | Based on the NITE GHS classification results. |
|----------------|---|

STOT-repeated exposure

| Chemical Name | STOT -repeated exposure- source information |
|----------------|---|
| Silver nitrate | Based on the NITE GHS classification results. |

Aspiration hazard

| Chemical Name | Aspiration Hazard source information |
|----------------|---|
| Silver nitrate | Based on the NITE GHS classification results. |

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

| Chemical Name | Algae/aquatic plants | Fish | Crustacea |
|----------------|----------------------|---|--|
| Silver nitrate | N/A | LOEC : <i>Oncorhynchus mykiss</i> 0.00016 mg/L 60d | EC50 : <i>Daphnia magna</i> 0.0014 mg/L 48h |

Other data

| Chemical Name | Short-term (acute) hazardous to the aquatic environment source information | Long-term (chronic) hazardous to the aquatic environment source information |
|----------------|--|---|
| Silver nitrate | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |

| | |
|--------------------------------------|--------------------------|
| Persistence and degradability | No information available |
| Bioaccumulative potential | No information available |
| Mobility in soil | No information available |
| Hazard to the ozone layer | No information available |

Section 13: DISPOSAL CONSIDERATIONS

Waste from residues

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated container and contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14: TRANSPORT INFORMATION

ADR/RID

| | |
|--------------------------------|---|
| UN number | UN3082 |
| Proper shipping name: | Environmentally hazardous substance, liquid, n.o.s. (Silver nitrate Solution) |
| UN classification | 9 |
| Subsidiary hazard class | |
| Packing group | III |
| Marine pollutant | Yes |

IMDG

| | |
|---|---|
| UN number | UN3082 |
| Proper shipping name: | Environmentally hazardous substance, liquid, n.o.s. (Silver nitrate Solution) |
| UN classification | 9 |
| Subsidiary hazard class | |
| Packing group | III |
| Marine pollutant (Sea) | Yes |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | No information available |

IATA

| | |
|--------------------------------|---|
| UN number | UN3082 |
| Proper shipping name: | Environmentally hazardous substance, liquid, n.o.s. (Silver nitrate Solution) |
| UN classification | 9 |
| Subsidiary hazard class | |
| Packing group | III |

Environmentally Hazardous Substance Yes

Section 15: REGULATORY INFORMATION

International Inventories

EINECS/ELINCS -
TSCA -

Japanese regulations

Fire Service Act Not applicable
Poisonous and Deleterious Substances Control Law Not applicable
Industrial Safety and Health Act Notifiable Substances (Law Art.57-2, Enforcement Order Art.18-2 Attached Table No.9)No.137
Regulations for the carriage and storage of dangerous goods in ship Noxious Substances (Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1)
Civil Aeronautics Law Miscellaneous Dangerous Substances and Articles (Ordinance Art.194, MITL Notification for Air Transportation of Explosives etc., Attached Table 1)
Pollutant Release and Transfer Register Law Not applicable
Water Pollution Control Act Harmful Substances (Law Art.2, Enforcement Order Art.2, Ordinance Designating Wastewater Standards Art.1)
Export Trade Control Order Not applicable
Air Pollution Control Law Hazardous Air Pollutants

| Chemical Name | Poisonous and Deleterious Substances Control Law | Industrial Safety and Health Act Substances (Law Art.57-2) | Pollutant Release and Transfer Register Law |
|--------------------------------------|--|--|---|
| Silver nitrate 7761-88-8 (0.34) | - | Applicable | - |

Section 16: OTHER INFORMATION

Key literature references and sources for data etc.

NITE: National Institute of Technology and Evaluation (JAPAN)
<http://www.safe.nite.go.jp/japan/db.html>
 IATA dangerous Goods Regulations
 RTECS:Registry of Toxic Effects of Chemical Substances
 Japan Industrial Safety and Health Association GHS Model SDS
 Dictionary of Synthetic Organic Chemistry , SSOCJ, Koudansha Scientific Co.Ltd.
 Chemical Dictionary, Kyouritsu Publishing Co., Ltd.
 etc

Disclaimer

This SDS is according to JIS Z 7253: 2019. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

GHS Classification is according to JIS Z7252(2019). *JIS: Japanese Industrial Standards

End of Safety Data Sheet