

## Safety Data Sheet

### 1. Identification of the substance/mixture and of the company/undertaking

#### Product identifier:

Product name: Silver, standard solution 1000mg/L

Product code (SDS NO): 25395jis\_J\_E1-1

#### Details of the supplier of the safety data sheet

Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.

Address: 1-6, Ohmano-cho, Koshigaya-shi, Saitama 343-0844, Japan

Division: Quality Assurance Department

Telephone number: +81-48-986-6161

FAX: +81-48-989-2787

e-mail address: shiyaku-t@junsei.co.jp

### 2. Hazards identification

#### GHS classification and label elements of the product

#### Classification of the substance or mixture

##### HEALTH HAZARDS

Acute toxicity (Inhalation): Category 2

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Specific target organ toxicity – single exposure: Category 2(respiratory system)

Specific target organ toxicity – repeated exposure: Category 2(respiratory system, tooth)

##### ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 2

Hazardous to the aquatic environment (Long-term): Category 2

(Note) GHS classification without description: Not classified/Classification not possible

#### Label elements



Signal word: Danger

#### HAZARD STATEMENT

H330-Fatal if inhaled

H314-Causes severe skin burns and eye damage

H318-Causes serious eye damage

H371-May cause damage to organs after single exposure

H373-May cause damage to organs through prolonged or repeated exposure

H401-Toxic to aquatic life

H411-Toxic to aquatic life with long lasting effects

#### PRECAUTIONARY STATEMENT

##### Prevention

Avoid release to the environment.

Do not breathe vapors.

In case of inadequate ventilation wear respiratory protection. (as specified by the manufacturer/supplier or the competent authority.)

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

Wear protective gloves, protective clothing or face protection.

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Wear eye protection/face protection.  
Do not eat, drink or smoke when using this product.

#### Response

Collect spillage.  
Get medical advice/attention if you feel unwell.  
Immediately call a POISON CENTER or doctor/physician.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
Wash contaminated clothing before reuse.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

#### Storage

Store in a well-ventilated place. Keep container tightly closed.  
Store locked up.

#### Disposal

Dispose of contents/container in accordance with local/national regulation.

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### 3. Composition/information on ingredients

#### Mixture/Substance selection:

##### Mixture

Ingredient name:Silver nitrate  
Content (%):0.16  
Chemical formula:AgNO<sub>3</sub>  
Chemicals No, Japan:1-8  
CAS No.:7761-88-8  
MW:169.87  
ECNO:231-853-9

Ingredient name:Nitric acid  
Content (%):5  
Chemical formula:HNO<sub>3</sub>  
Chemicals No, Japan:1-394  
CAS No.:7697-37-2  
MW:63.01  
ECNO:231-714-2

Ingredient name:Water  
Content (%):<95  
Chemical formula:H<sub>2</sub>O  
CAS No.:7732-18-5  
MW:18.02  
ECNO:231-791-2

Note : The figures shown above are not the specifications of the product.

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### 4. First-aid measures

#### Descriptions of first-aid measures

##### General measures

Get medical attention/advice if you feel unwell.  
Immediately call a POISON CENTER or doctor/physician.

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**IF INHALED**

Remove person to fresh air and keep comfortable for breathing.  
Call a POISON CENTER or doctor/physician if you feel unwell.

**IF ON SKIN (or hair)**

Take off immediately all contaminated clothing. Rinse skin with water/shower.  
If skin irritation or rash occurs: Get medical advice/attention.

**IF IN EYES**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists: Get medical advice/attention.

**IF SWALLOWED**

Rinse mouth. Do NOT induce vomiting.  
Call a POISON CENTER or doctor/physician if you feel unwell.

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**5. Fire-fighting measures****Extinguishing media****Suitable extinguishing media**

Use appropriate extinguishing media suitable for surrounding facilities.  
The product is non-flammable.

**Specific hazards arising from the substance or mixture**

Containers may explode when heated.  
Fire may produce irritating, corrosive and/or toxic gases.  
Runoff from fire control or dilution water may cause pollution.

**Advice for firefighters****Specific fire-fighting measures**

Evacuate non-essential personnel to safe area.

**Special protective equipment and precautions for fire-fighters**

Wear fire/flame resistant/retardant clothing.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

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**6. Accidental release measures****Personnel precautions, protective equipment and emergency procedures**

Keep unauthorized personnel away.  
In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.  
Ventilate area until material pick up is complete.  
Wear proper protective equipment.  
**PUBLIC SAFETY:** Ventilate closed spaces before entering.

**Environmental precautions**

Avoid release to headsprings, rivers, lakes, ocean and groundwater.

**Methods and materials for containment and cleaning up**

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.  
All equipment used when handling the product must be grounded.

**Preventive measures for secondary accident**

Collect spillage.  
Stop leak if you can do it without risk.

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## 7. Handling and storage

### Precautions for safe handling

#### Preventive measures

(Exposure Control for handling personnel)

Do not breathe vapors.

(Protective measures against fire and explosion)

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

#### Safety Measures

Use only outdoors or in a well-ventilated area.

Wear protective gloves, protective clothing or face protection.

Wear eye protection/face protection.

Use personal protective equipment as required.

When using do not eat, drink or smoke.

#### Any incompatibilities

Bases should not be mixed with the chemicals.

#### Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wash contaminated clothing before reuse.

#### Storage

##### Conditions for safe storage

Store in a well-ventilated place. Keep container tightly closed.

Keep cool. Protect from sunlight.

Store locked up.

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## 8. Exposure controls/personal protection

### Control parameters

Control value in MHLW is not available.

#### Adopted value

(Nitric acid)

JSOH(1982) 2ppm; 5.2mg/m<sup>3</sup>

ACGIH(1992) TWA: 2ppm;

STEL: 4ppm (URT & eye irr; dental erosion)

(Silver nitrate)

JSOH(1991) 0.01mg-Ag/m<sup>3</sup>

ACGIH(1992) TWA: 0.01mg-Ag/m<sup>3</sup> (Argyria)

#### OSHA-PEL

(Nitric acid)

TWA: 2ppm, 5mg/m<sup>3</sup>

(Silver nitrate)

TWA: 0.01mg-Ag/m<sup>3</sup>

#### NIOSH-REL

(Nitric acid)

TWA: 2ppm; STEL: 4ppm

(Silver nitrate)

TWA: 0.01mg-Ag/m<sup>3</sup>

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#### Exposure controls

##### Appropriate engineering controls

- Do not use in areas without adequate ventilation.
- Eye wash station should be available.
- Washing facilities should be available.

##### Individual protection measures

##### Respiratory protection

- Wear respiratory protection.

##### Hand protection

- Wear protective gloves.
- Consult with your glove and/or personnel equipment manufacturer for selection of appropriate compatible materials.

##### Eye protection

- Wear eye/face protection.

##### Skin and body protection

- Wear impervious clothing and boots in case of repeated or prolonged treatment.

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## 9. Physical and Chemical Properties

### Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless

Odor data is not available.

pH: Acidic

Boiling point or initial boiling point data is not available.

Boiling range data is not available.

Evaporation rate data is not available.

Melting point/Freezing point data is not available.

Decomposition temperature data is not available.

Self-Accelerating Decomposition Temperature/SADT data is not available.

Flammability (gases, liquids and solids): Non-ignitable

Flash point data is not available.

Auto-ignition temperature data is not available.

Critical temperature data is not available.

Lower and upper explosion limit/flammability limit data is not available.

Vapor pressure data is not available.

Vapor density data is not available.

VOC data is not available.

Relative vapor density (Air=1) data is not available.

Relative density of the Vapor/air - mixture at 20°C (Air = 1) data is not available.

Density and/or relative density data is not available.

Dynamic viscosity data is not available.

Kinematic viscosity data is not available.

### Solubility:

Solubility in water: Miscible

Solubility in solvent data is not available.

n-Octanol/water partition coefficient data is not available.

No Particle characteristics data is not available.

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## 10. Stability and Reactivity

Reactivity data is not available.

### Chemical stability

- Stable under normal storage/handling conditions.

Silver, standard solution 1000mg/L,  
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Conditions to avoid

Contact with incompatible materials.  
Heat.

Incompatible materials

Bases

Hazardous decomposition products

Nitrogen oxides, Silver oxides

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## 11. Toxicological Information

### Information on toxicological effects

#### Acute toxicity

##### Acute toxicity (Oral)

[GHS Cat. Japan, base data]  
(Silver nitrate) rat LD50=1170mg/kg (IUCLID, 2000)

##### Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]  
(Nitric acid) vapor: rat LC50=49ppm/4hr (JSOH, 1982)

##### Labor standard law, Japan; Toxic

Nitric acid

#### Irritant properties

##### Skin corrosion/irritation

[GHS Cat. Japan, base data]  
(Nitric acid) human : severe damage (ACGIH 7th, 2001)  
(Silver nitrate) rabbit : local irritation (EU RAR 23, 2002)

##### Serious eye damage/irritation

[GHS Cat. Japan, base data]  
(Nitric acid) human : non recoverable corneal opacity to blindness (ACGIH 7th, 2001)  
(Silver nitrate) severe corrosive (CICAD 44, 2003)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenic effects data is not available.

Reproductive toxicity data is not available.

#### STOT

##### STOT-single exposure

[cat.1]  
[GHS Cat. Japan, base data]  
(Nitric acid) respiratory apparatus (SIDS, 2010)  
[cat.3 (resp. irrit.)]  
[GHS Cat. Japan, base data]  
(Silver nitrate) respiratory tract irritation (PATTY 6th, 2012)

##### STOT-repeated exposure

[cat.1]  
[GHS Cat. Japan, base data]  
(Nitric acid) respiratory apparatus; teeth (SIDS, 2010)

Aspiration hazard data is not available.

#### Additional data

Data on the preparation itself is not available.

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## 12. Ecological Information

### Ecotoxicity

#### Aquatic toxicity

H401-Toxic to aquatic life

H411-Toxic to aquatic life with long lasting effects

#### Aquatic acute toxicity component(s) data

[GHS Cat. Japan, base data]

(Silver nitrate) Crustacea (Daphnia magna) EC50=0.0014mg/L/48hr (CICADs 44, 2002)

(Nitric acid) Fish (Gambusia affinis) LC50=72mg/L/96hr (SIDS, 2010)

#### Aquatic chronic toxicity component(s) data

[GHS Cat. Japan, base data]

(Silver nitrate) Fish (rainbow trout)LOEC=0.00016mg/L/60days

#### Water solubility

(Silver nitrate) very good (ICSC, 1998)

(Nitric acid) miscible (ICSC, 2006)

Persistence and degradability data is not available.

#### Bioaccumulative potential

(Silver nitrate) BCF=600 (Existing Chemical Safety Inspections Data, Japan)

(Nitric acid) log Pow=-0.21 (ICSC, 2006)

Mobility in soil data is not available.

Ozone depleting chemical data is not available.

#### Additional data

Data on the preparation itself is not available.

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## 13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

#### Waste treatment methods

Avoid release to the environment (- if this is not the intended use).

Dispose of contents/container in accordance with local/national regulation.

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## 14. Transport Information

### UN No., UN CLASS

UN No.: 2031

Proper Shipping Name : NITRIC ACID, other than red fuming, with 20% or less nitric acid

Class or division : 8

Packing group : II

ERG GUIDE No.: 157

### IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 2031

Proper Shipping Name : NITRIC ACID, other than red fuming, with 20% or less nitric acid

Class or division : 8

Packing group : II

### IATA Dangerous Goods Regulations

UN No.: 2031

Proper Shipping Name : NITRIC ACID, other than red fuming, with 20% or less nitric acid

Class or division : 8

Hazard labels : Corrosive

Packing group : II

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Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : yes

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15. Regulatory Information

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

Environmental hazards

MARPOL Annex V – Prevention of pollution by garbage discharge

Hazardous to the aquatic environment – long-term hazard: cat.1, 2

Silver nitrate

Transport in bulk according to Annex II of MARPOL73/78 and IBC Code

Noxious Liquid ; Cat. Y

Nitric acid

Non Noxious Liquid ; Cat. OS

Water

US major regulations

Chemicals listed in TSCA Inventory

Nitric acid; Water; Silver nitrate

Other regulatory information

We are not able to check up the regulatory information with regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.

Regulatory information with regard to this substance in your country or in your region should be examined by your own responsibility.

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

Regulatory information in this section are limited to intentional ingredient(s), but does not contain information on non-intentional ingredients or impurities which are not informed by supplier(s).

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16. Other information

GHS classification and labelling

H330–Acute Tox. 2: H330 Fatal if inhaled

H314–Skin Corr. 1: H314 Causes severe skin burns and eye damage

H318–Eye Dam. 1: H318 Causes serious eye damage

H371–STOT SE 2: H371 May cause damage to organs after single exposure

H373–STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure

H401–Aquatic Acute 2: H401 Toxic to aquatic life

H411–Aquatic Chronic 2: H411 Toxic to aquatic life with long lasting effects

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (6th ed., 2015), UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN

IMDG Code, 2018 Edition (Incorporating Amendment 39–18)

IATA Dangerous Goods Regulations (60th Edition) 2019

Classification, labelling and packaging of substances and mixtures (table3–1 ECNO6182012)

2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2019 TLVs and BEIs. (ACGIH)

<http://monographs.iarc.fr/ENG/Classification/index.php>

JIS Z 7253 : 2019

JIS Z 7252 : 2019

2019 Recommendation on TLVs (JSOH)

Supplier's data/information



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Chemicals safety data management system "GHS Assistant" (<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform (NITE-CHRIP)

[https://www.nite.go.jp/en/chem/chrip/chrip\\_search/systemTop](https://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop)

GHS Classification Guidance for Enterprises 2013 Revised Edition (Aug. 2013, METI)

#### General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2018).