



## Safety Data Sheet

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

Product identifier:

Product name: Silver, granular

SDS No. : 70342E-3

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

Research and Development

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Chemical Safety Management Department

Telephone number: +81-6-6946-8061

FAX: +81-6-6946-1607

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### Section 2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

HEALTH HAZARDS

Serious eye damage/eye irritation: Category 2B

Skin sensitization: Category 1

Reproductive toxicity: Category 1B

Specific target organ toxicity – single exposure: Category 1 (respiratory system)

Specific target organ toxicity – repeated exposure: Category 1 (eyes, respiratory system)

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

Label elements



Signal word: Danger

HAZARD STATEMENT

H320 Causes eye irritation

H317 May cause an allergic skin reaction

H360 May damage fertility or the unborn child

H370 Causes damage to organs (respiratory system)

H372 Causes damage to organs through prolonged or repeated exposure (eyes, respiratory system)

PRECAUTIONARY STATEMENT

Prevention

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P264 Wash contaminated parts thoroughly after handling.

P280 Wear protective gloves.

P272 Contaminated work clothing should not be allowed out of the workplace.

P280 Use personal protective equipment as required.

P270 Do not eat, drink or smoke when using this product.

**Response**

- P314 Get medical advice/attention if you feel unwell.  
P308 + P313 IF exposed or concerned: Get medical advice/attention.  
P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor/physician.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.  
P362 + P364 Take off contaminated clothing and wash it before reuse.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337 + P313 If eye irritation persists: Get medical advice/attention.

**Storage**

- P405 Store locked up.

**Disposal**

- P501 Dispose of contents/container in accordance with local/national regulation.

**Specific adverse human health effects**

- See "11. Toxicological Information".

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**Section 3. Composition/information on ingredients**

Mixture/Substance selection:

Substance

Ingredient name	Content (%)	CAS No.	ENCS	Chemical formula
Silver	99(min)	7440-22-4	-	Ag

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

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**Section 4. First-aid measures**

Descriptions of first-aid measures

General measures

- Get medical advice/attention if you feel unwell.

IF INHALED

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

IF ON SKIN

- Take off immediately all contaminated clothing. Rinse skin with water or shower.  
Wash with plenty of soap and water.  
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.  
Call a POISON CENTER/doctor/physician if you feel unwell.

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**Section 5. Fire-fighting measures**

Extinguishing media

**Suitable extinguishing media**

Use appropriate extinguishing media suitable for surrounding facilities.

**Unsuitable extinguishing media**

Unsuitable extinguishing media data is not available.

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

Fire may produce irritating, corrosive and/or toxic gases.

Runoff from fire control or dilution water may cause pollution.

See "10. Stability and Reactivity".

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

Evacuate non-essential personnel to safe area.

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

Wear fire resistant or flame retardant clothing.

Wear protective gloves/protective clothing/eye protection/face protection.

Firefighters should wear self-contained breathing apparatus with a full facepiece operated in the positive pressure mode.

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

Keep unauthorized personnel away.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

**Environmental precautions**

Prevent spills from entering sewers, watercourses, low areas or rivers. To be careful not discharged to the environment without being properly handled waste water contaminated.

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

Sweep up, place in a bag and hold for waste disposal.

**Preventive measures for secondary accident**

Collect spillage.

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**Section 7. Handling and storage****Precautions for safe handling****Preventive measures**

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

**Safety Measures**

Do not handle until all safety precautions have been read and understood.

Wear protective gloves/protective clothing/eye protection/face protection.

Wash hands et al thoroughly after handling.

When using do not eat, drink or smoke.

**Any incompatibilities**

See "10.Stability and Reactivity".

**Advice on general occupational hygiene**

Wash contaminated parts thoroughly after handling.

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

Contaminated work clothing should not be allowed out of the workplace.

Take off contaminated clothing and wash it before reuse.

**Storage****Conditions for safe storage**

Keep container tightly closed.

Store locked up. (P405)

Store in a cool, dry place. Do not store in direct sunlight.

Storage in accordance with local/national regulation.

**Container and packaging materials for safe handling**

Use closed unbreakable containers.

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**Section 8. Exposure controls/personal protection****Control parameters**

Control value and concentration standard value are not available in ISHA.

**Adopted value**

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

ACGIH(1992) TWA: 0.1mg-Ag/m<sup>3</sup> (Argyria)

**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**

Recommend to use protective equipment in conformity with the standards.

Use appropriate protective equipment in accordance with local/national regulation.

**Respiratory protection**

Wear respiratory protection (dust-proof mask/gas mask). Select chemical cartridge corresponding to type of gases when using a gas mask.

**Hand protection**

Wear impervious protective glove.

**Eye protection**

Wear eye/face protection. Wear safety goggles in cases gas is generated.

**Skin and body protection**

Wear protective clothing.

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**Section 9. Physical and Chemical Properties****Information on basic physical and chemical properties**

Physical state: Granular

Color: Silver-white to white

Odor data is not available.

Melting point/Freezing point: 962°C

Boiling point or initial boiling point: (Silver)2212°C

Boiling range data is not available.



Flammability (gases, liquids and solids) data is not available.

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

Flash point data is not available.

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Practically insoluble (< 0.01 g/100 ml)

Solubility in solvent data is not available.

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

Vapor pressure data is not available.

Density and/or relative density: 10.5

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

Particle characteristics data is not available.

Other information

Other information is not available.

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## Section 10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

Dust explosion possible if in powder or granular form, mixed with air.

Finely divided silver can be combustible and reactive; in its bulk form silver is stable and non-combustible. Reacts with many other substances. This generates fire and explosion hazard. (ICSC 0810)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Strong acids, Strong bases, Concentrated hydrogen peroxide solution

Hazardous decomposition products

Silver compounds

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## Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity data is not available.

Irritant properties

Skin corrosion/irritation data is not available.

Serious eye damage/irritation

[Product]

Category 2B, Causes eye irritation

[Data for components of the product]

[GHS Cat. Japan, base data]

rabbit recover in 48 hours (IUCLID, 2000)

Sensitization



## Skin sensitization

## [Product]

Category 1, May cause an allergic skin reaction

## [Data for components of the product]

[GHS Cat. Japan, base data]

cat. 1; ACGIH, 2001

Mutagenic effects data is not available.

Carcinogenic effects data is not available.

## Reproductive toxicity

## [Product]

Category 1B, May damage fertility or the unborn child

## [Data for components of the product]

[GHS Cat. Japan, base data]

cat. 1B; (Water-soluble silver compound (Silver acetate CAS RN: 563-63-3 and Silver chloride CAS RN: 7783-90-6)): CLH Report, 2020; EFSA, 2016

## Specific target organ toxicity (STOT)

## STOT-single exposure

## [Product]

Category 1, Causes damage to organs

## [Data for components of the product]

## [cat.1]

[GHS Cat. Japan, base data]

respiratory system (ACGIH, 2001)

## STOT-repeated exposure

## [Product]

Category 1, Causes damage to organs through prolonged or repeated exposure

## [Data for components of the product]

## [cat.1]

[GHS Cat. Japan, base data]

eyes (ATSDR ToxFAQ, 1997)

respiratory system (HSDB, 2003)

Aspiration hazard data is not available.

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**Section 12. Ecological Information**

## Toxicity

Toxicity data is not available.

## Water solubility

none (ICSC, 1997)

## Persistence and degradability

Persistence and degradability data is not available.

## Bioaccumulative potential

Bioaccumulative potential data is not available.

## Mobility in soil

Mobility in soil data is not available.

## Other adverse effects

Ozone depleting chemical data is not available.



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**Section 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

Dispose of contents/container as industrial waste. Accordance with local/national regulation.

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**Section 14. Transport Information**

UN Number or ID Number : Not regulated

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : Not regulated

IATA (Dangerous Goods Regulations)

UN Number or ID Number : Not regulated

Environmental hazards

Marine pollutants (yes/no) : no

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**Section 15. Regulatory Information**

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

U.S. Toxic Substances Control Act (TSCA) Inventory

Chemicals listed in TSCA Inventory

Applicable

Other regulatory information

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

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**Section 16. Other information**

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 22nd edit., 2021 UN

IMDG Code, 2022 Edition (Incorporating Amendment 41-22)

IATA Dangerous Goods Regulations (65th Edition) 2024

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2024 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2023 Recommendation on TLVs (JSOH)

Supplier's data/information

General Disclaimer

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Unauthorized translation or modification is prohibited.

Please provide SDS to customers for selling or transferring.

All chemicals have unknown hazard. Handle the product with care.

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 2022).