



Safety Data Sheet

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

Product identifier:

Product name: Silver(I)nitrate

SDS No. : 7055E-4

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

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

Division: Safety Management Dept. of Chemicals

Telephone number: +81-6-6946-8061

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2. Hazards identification

GHS classification and label elements of the product**Classification of the substance or mixture****PHYSICAL AND CHEMICAL HAZARDS**

Oxidizing solids: Category 2

HEALTH HAZARDS

Acute toxicity (Oral): Category 4

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)

Specific target organ toxicity – repeated exposure: Category 1 (respiratory apparatus/system)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 1

Hazardous to the aquatic environment (Long-term): Category 1

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

Label elements

Signal word: Danger

HAZARD STATEMENT

May intensify fire; oxidizer

Harmful if swallowed

Causes severe skin burns and eye damage

Causes serious eye damage

May cause respiratory irritation

Causes damage to organs through prolonged or repeated exposure (respiratory apparatus/system)

Very toxic to aquatic life

Very toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT**Prevention**

Avoid release to the environment.

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

Keep/Store away from clothing/combustible materials.

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



Use only outdoors or in a well-ventilated area.
Wash contaminated parts thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not eat, drink or smoke when using this product.

Response

In case of fire: Use appropriate media other than water for extinction.
Collect spillage.
Get medical advice/attention if you feel unwell.
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: Call a POISON CENTER or doctor/physician if you feel unwell.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage

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

Disposal

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

Specific Physical and Chemical hazards

Oxidizing material. Organic or combustible material may catch fire in contact with it.

3. Composition/information on ingredients**Mixture/Substance selection:****Substance**

Ingredient name:Silver(I) nitrate
Content (%):99(min)
Chemical formula:AgNO₃
Chemicals No, Japan:1-8
CAS No.:7761-88-8
MW:169.87
ECNO:231-853-9

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

4. First-aid measures**Descriptions of first-aid measures****General measures**

Get medical attention/advice if you feel unwell.

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.



5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use water mist, water jet, foam, dry powder, dry sand to extinguish.

Unsuitable extinguishing media

Inactive gas firefighting equipment

Halogenated firefighting system

Dry-powder firefighting equipment – hydrogen carbonate etc.

Dry-powder firefighting equipment – except for phosphate etc.,hydrogen carbonate etc.

Carbon dioxide extinguisher

Halogenated extinguisher

Dry-powder extinguisher – hydrogen carbonate etc.

Dry-powder extinguisher – except for phosphate etc.,hydrogen carbonate etc.

Specific hazards arising from the substance or mixture

Containers may explode when heated.

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

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.

6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

Avoid raising dust.

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.

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/sparks/open flames/hot surfaces. – No smoking.

Keep/Store away from clothing/combustible materials.

(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/eye protection/face protection.

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.

Wash contaminated clothing before reuse.

Storage

Conditions for safe storage

Keep container tightly closed.

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

Keep under lock and key.

Block out light.

Container and packaging materials for safe handling

Glass

Polyethylene

8. Exposure controls/personal protection

Control parameters

Adopted value

(Silver(I) nitrate)

ACGIH(1992) TWA: 0.01mg-Ag/m³ (Argyria)

OSHA-PEL

Silver(I) nitrateTWA: 0.01mg-Ag/m³

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.

Eye protection

Wear eye/face protection.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Crystal or crystalline powder

Color: White

Odor: Practically odourless

pH data is not available.

Boiling point or initial boiling point: (decomposes) 444°C

Boiling range data is not available.

Melting point/Freezing point: 212°C

Decomposition temperature data is not available.

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

Flash point data is not available.

Auto-ignition temperature data is not available.



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

Vapor pressure data is not available.

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

Density and/or relative density: 4.35(20°C)

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Very good

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

No Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Turns gray to grayish black on exposure to light.

Possibility of hazardous reactions

Decomposes on heating. This produces toxic fumes including nitrogen oxides. The substance is a strong oxidant. It reacts violently with combustible and reducing materials. Reacts with incompatible substances such as acetylene, alkalies and halides and many other compounds. This generates fire and explosion hazard. Attacks some forms of plastic, rubber and coatings. (ICSC 1116)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Bases, Reducing agents, Combustible materials, Acetylene, Halides

Hazardous decomposition products

Nitrogen oxides

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Silver(I) nitrate)

rat LD50=1170mg/kg (IUCLID, 2000)

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Silver(I) nitrate)

rabbit local irritation (EU RAR 23, 2002)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Silver(I) 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.3 (resp. irrit.)]



[GHS Cat. Japan, base data]
(Silver(I) nitrate)
respiratory tract irritation (PATTY 6th, 2012)

STOT-repeated exposure
[cat.1]

[GHS Cat. Japan, base data]
(Silver(I) nitrate)
respiratory apparatus (ACGIH 7th, 2001)

Aspiration hazard data is not available.

Additional data

May cause lung disorders by massive inhalation of powdered substance.
-e.g. fibrosis of lung tissue, cough, sputum, breath shortness, dyspnea, decline of lung function, interstitial lung disease, pneumothorax

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Very toxic to aquatic life
Very toxic to aquatic life with long lasting effects

Aquatic acute toxicity component(s) data

[GHS Cat. Japan, base data]
(Silver(I) nitrate)
Crustacea (Daphnia magna) EC50=0.0014mg/L/48hr (CICADs 44, 2002)

Aquatic chronic toxicity component(s) data

[GHS Cat. Japan, base data]
(Silver(I) nitrate)
Fish (rainbow trout)LOEC=0.00016mg/L/60days

Water solubility

(Silver(I) nitrate)
very good (ICSC, 1998)

Persistence and degradability

Persistence and degradability data is not available.

Bioaccumulative potential

(Silver(I) nitrate)
BCF=600 (Check & Review, Japan)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

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.



14. Transport Information

UN No.: 1493

Proper Shipping Name :

SILVER NITRATE

Class or division : 5.1

Packing group : II

ERG GUIDE No.: 140

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1493

Proper Shipping Name :

SILVER NITRATE

Class or division : 5.1

Packing group : II

IATA Dangerous Goods Regulations

UN No.: 1493

Proper Shipping Name :

SILVER NITRATE

Class or division : 5.1

Hazard labels : Oxidizer

Packing group : II

Environmental hazards**MARPOL Annex III – Prevention of pollution by harmful substances**

Marine pollutants (yes/no) : yes

MARPOL Annex V – Prevention of pollution by garbage discharge

Specific target organ toxicity – repeated exposure: cat.1

Silver(I) nitrate

Hazardous to the aquatic environment – acute hazard: cat.1

Silver(I) nitrate

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

Silver(I) nitrate

15. Regulatory Information

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

US major regulations

Chemicals listed in TSCA Inventory

Silver(I) nitrate

Other regulatory information

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

16. Other information

GHS classification and labelling

Ox. Sol. 2: H272 May intensify fire; oxidizer

Acute Tox. 4: H302 Harmful if swallowed

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

Eye Dam. 1: H318 Causes serious eye damage

STOT SE 3: H335 May cause respiratory irritation

STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure

Aquatic Acute 1: H400 Very toxic to aquatic life

Aquatic Chronic 1: H410 Very 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>

Supplier's data/information

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).