

Safety Data Sheet

Silver Sulfate

1st Version : Feb. 17. 2010

Revised : Feb. 28. 2024

1. Product and company information

Product Name : Silver Sulfate
 Company Name : Toyo Chemical Industrial Co., Ltd.
 Address : 2-26-13 Naka-Izumi, Komae-City, Tokyo
 Tel : +81-3-3489-5152
 Fax : +81-3-3488-1706
 Emergency Contact : As above
 Recommended use of the product and restrictions on use : Reagents

2. Hazard identification

GHS classification of the substance

Environmental hazards : Hazardous to the aquatic environment, acute hazard Category 1
 Hazardous to the aquatic environment, chronic hazard Category 1

GHS Label elements

Pictograms :



Signal word : Warning
 Hazard statements : H400 : Very toxic to aquatic life
 H410 : Very toxic to aquatic life with long lasting effects

Precautionary statement

Safety measures : P273 : Avoid release to the environment.
 Emergency measures : P391 : Collect spillage.
 Storage : No information
 Disposal : P501 : Dispose of contents/container entrust to a specialized waste disposal company.

3. Composition/information on ingredients

Substance or Mixture :

Substance

Chemical name	Molecular formula (molecular weight)	CAS No.	Reference numbers in gazetted list in Japan (CSCL)	Reference numbers in gazetted list in Japan (ISHL)	Concentration or concentration range
Silver (I) Sulfate	Ag ₂ SO ₄ (311.80)	10294-26-5	1-10	—	100%

4. First-aid measures

If inhalation : Get medical advice/attention if you feel unwell.
 Skin contact : Wash with plenty of water and soap.
 Eye contact : Get medical advice/attention if you feel unwell.
 Eye contact : Rinse cautiously with water for several minutes.
 If eye irritation persists get medical advice/attention.
 Ingestion : Rinse mouth.
 Get medical advice/attention if you feel unwell.

Protection of people implementing emergency measures : No information

5. Fire-fighting measures

Suitable extinguishing media : Water spray, foam retardants, powder retardants, carbon dioxide gas, dry sand, etc.
 Do not use extinguishing media : Rod-shaped water discharge
 Specific hazards : This substance is nonflammable and does not burn itself, but can decompose when heated to outbreak harmful gas(SOx).
 Specific fire extinguishing method : Move the container from the region on fire if there is no danger.
 Continue to thoroughly cool the containers using copious amounts of water even after the fire has been extinguished.
 Special protective actions fire-fighters : When firefighting, Wear suitable air respirators and protective clothing (heat resistant).
 (See section 8. Exposure controls / personal protection)

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures : Workers must wear appropriate protective equipment (see section 8. Exposure controls / personal protection) and avoid contact with eyes and skin and inhalation.
 Do not touch the leakage and do not walk on it.
 Immediately isolate appropriate distances in all directions as leak areas.
 Prohibit the entrance except the person concerned.
 Ventilate enclosed area before entering.
 Environmental precautions : Avoid discharging into the environment.
 Methods and materials for containment and cleaning up : Wet with water to reduce dust in the air and prevent dispersion.
 Sweep up any leaks and collect in a sealable empty container for later disposal.
 Preventing secondary accidents : Do a cover of a plastic seat, prevent dispersion.

7. Handling and storage

Handling
 Technical measures : Take the equipment measures described in "8. Exposure controls/personal protection" and wear protective equipment.
 Described in "8. Exposure controls/personal protection" perform local exhaust and general ventilation.
 Precautions for safe handling : Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Do not eat, drink or smoke when using this product.
 Do not contact, inhale or swallow.
 Do not get in eyes, on skin, or on clothing.
 Do not inhale dust, fumes, or mist.
 Wash hands thoroughly after handling.
 Avoid discharging into the environment.
 Contact evasion : See "10. Stability and reactivity" section.
 Storage
 Safe storage conditions : Store locked up.
 Store in a closed container, dry and cool place.
 Store in a cool, dark place away from direct sunlight.
 Container and packing materials: Airtight containers (glass, polyethylene, polypropylene, stainless steel, etc.)

8. Exposure controls/personal protection

Control concentration
 Tolerable concentration :
 Japan Society for Occupational Health (2021) 0.01mg/m³ (as Ag)
 ACGIH (2014) TLV-TWA (0.01 mg/m³) as Ag Soluble compounds
 TLV-STEL (Not set)

Equipment measures :	Workplaces storing or handling this material should be equipped with an eyewash facilities and safety shower. Enclose the equipment or install a local exhaust ventilation to prevent exposure.
Protective Equipment	
Respiratory protection :	Wear suitable respiratory equipment (gas mask (in case of fire: air respirator), dust mask). (Refer to JIS T8151 Particulate respirators, JIS T8152 Gas respirators, JIS T8155 Compressed air open-circuit self-contained breathing apparatus)
Hand protection :	Wear protective gloves. (rubber gloves, etc.) (Refer to JIS T8116 Chemical protective gloves)
Eye protection :	Wear appropriate eye protection (regular glasses, plain glasses with side plates, goggles). (Refer to JIS T8147 Protective Glasses)
Skin and body protection :	Wear protective clothing, and protective shoes, etc. (Refer to JIS T8115 Chemical Protective Clothing, JIS T8117 Chemical Protective Boots)

9. Physical and chemical properties

Physical state :	Solid
Color :	Colorless to white
Odor :	No information
Melting point/freezing point :	652°C : NITE (Access on Oct.2008)
Boiling point, initial boiling point, and boiling range :	No information
Flammability :	No information
Lower and upper explosion limit / flammability limit :	Solids are not applicable
Flash point :	Solids are not applicable
Aut-ignition temperature :	Solids are not applicable
Decomposition temperature :	No information
pH :	No information
Kinematic viscosity :	Solids are not applicable
Solubility :	Water: 20°C 0.769g/100ml : Poisonous and Deleterious Guide (1998)
Partition coefficient: n-octanol / water (log value) :	No information
Vapor pressure :	No information
Density and/or relative density	d ¹⁵ 5.46 : NITE (Access on Oct.2008)
Relative vapour density :	Solids are not applicable
Particle characteristics	No information

10. Stability and reactivity

Reactivity :	No information
Chemical stability :	Storage and handling in accordance with laws and regulations is considered stable.
Possibility of hazardous reactions :	No information
Conditions to avoided :	No information
Incompatible materials :	No information
Hazardous decomposition products :	No information

11. Toxicological information

Acute toxicity	
Oral :	Classification is not possible due to lack of data.
Dermal :	Classification is not possible due to lack of data.
Inhalation : Gases	The definition of GHS is a solid.
Inhalation : Vapours	Classification is not possible due to lack of data.
Inhalation : Dusts and mists	Classification is not possible due to lack of data.
Skin corrosios/irritation :	Although it suspects skin irritation as sulfate, there is no data.

Serious eye damage/irritation :	Although it suspects eye irritation as sulfate, there is no data.
Respiratory sensitization :	Classification is not possible due to lack of data.
Skin sensitization :	Classification is not possible due to lack of data.
Germ-cell mutagenicity :	Classification is not possible due to lack of data.
Carcinogenicity :	No data is available for this substance. IRIS (1989) categorizes silver as D (out of category). No carcinogenicity assessment of sulfates was found. Therefore Classification is not possible due to lack of data.
Reproductive toxicity :	Although a silver compounds has description that there is no reproductive toxicity (PATTY (5th, 2001)), there is no data about the existence of the reproductive toxicity of sulfate, and this product data is not found, it cannot classify.
Specific target organ toxicity (single exposure) :	Although it suspects respiratory irritation as sulfate, there is no data.
Specific target organ toxicity (repeated exposure) :	Although there were descriptions that argyria is occurred by prolonged exposure of silver compounds to skin (PATTY, 5th, 200; ACGIH-TLV, 2005; HSDB, 2003), it was considered that there was no suggestion of significant effects on human health. Moreover, it could not be classified for lack of data because no data of this product was confirmed.
Aspiration hazard :	Classification is not possible due to lack of data.

12. Ecological information

Toxicity	
Hazardous to the aquatic environment (acute) :	Crustacea (Feline Daphnia) 48-hour EC50=4.5µg/L (AQUIRE, 2003), based on the above, it was set as Category 1.
Hazardous to the aquatic environment (chronic) :	Acute toxicity Category 1, metal compound behavior in water is unknown, and bioaccumulative. Based on the above, it was classified into Category 1.
Persistence and degradability :	No information
Bioaccumulative potential :	No information
Mobility in soil :	No information
Hazard to the ozone layer :	The materials concerned are not listed by an affiliated book of Montreal Protocol.

13. Disposal considerations

Residual waste :	Prior to disposal, treatments such as detoxification, stabilization and neutralization are carried out to the extent possible to reduce the hazard level. Dispose of in accordance with relevant laws and local government standards. Outsource to an industrial waste disposal ontractor licensed by the prefectural governor, or if a local public entity does the disposal, outsource it there. If outsourcing waste disposal, thoroughly notify the disposal companies of the dangers and harmfulness before outsourcing. Avoid discharging wastewater and washing wastewater containing this substance of directly into rivers, or landfill, or dumping.
Dirty containers and packaging :	Containers should be cleaned and recycled or disposed of properly in accordance with relevant laws and local government standards. When disposing of empty containers, completely remove the contents.

14. Transport information

International regulations	
UN No. :	No information
Proper shipping name :	No information
Class :	No information
Sub risk :	No information
Packing group :	No information
Marine pollutant (sea) :	Not applicable
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code :	Not applicable

Japanese regulations

Land regulations information :	Obey poisonous and deleterious substances control act and Fire services act regulations.
Maritime regulations information :	Obey ship safety law regulations.
Aviation regulations information :	Obey the civil aeronautics law.
Special safety measures :	Yellow card must be held required during transport. Do not transport together with food or livestock feed. Do not add heavy goods. When transporting, avoid direct sunlight, load containers without damage, corrosion, or leakage, and securely prevent collapse of cargo.

15. Regulatory information (Japanese law)

Poisonous and deleterious substances control act :	Deleterious substance not for medical use (Article 2-1-24 of cabinet order)
Air pollution control act	Hazardous air pollutants (45 of Central environment council 9th report)
Ship safety act :	Hazardous substances
Civil aeronautics act :	Hazardous substances
Act on port regulations :	Hazardous substances

*Laws and regulations are examples and do not cover domestic laws and regulations.

16. Other information

References, etc. :	GHS classification results database: NITE website GHS model SDS information: JISHA website Ministry of health, labor and welfare website JIS Z7252 : 2019 JIS Z7253 : 2019 Selection Manual for Protective Equipment for Prevention of Skin Damage, etc. (Ministry of Health, Labour and Welfare Feb.2024)
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*Caution:

Although hazard and harmfulness evaluations are based on the data and information available at the current time, they may not be sufficient.
Please handle with care.
Furthermore, the data and evaluations described herein are not in any way guaranteed. The descriptions refer to normal handling.
Regarding special handling, please handle based on the safety measures which are suitable for the intended applications and methods of use.
This SDS is an English translation of a document prepared in Japanese in accordance with JIS Z7253:2019.