

Safety Data Sheet **SILVER Metal**

SDS no. LPV1B78L • Version 1.0 • Date of issue: 2023-07-15

SECTION 1: Identification

GHS Product identifier

Product name SILVER Metal

Recommended use of the chemical and restrictions on use

Electrical conductors, mirrors, silver plating, electronic equipment, sterilant, water purification, solar cells, reflectors for solar towers, electrical contacts, bearing metals and laboratory reagent.

Supplier's details

Name ChemSupply Australia Pty Ltd
Address 38-50 Bedford Street
5013 Gillman South Australia
Australia

Telephone 08 8440 2000
email www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

General hazard statement

Not classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as non-Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

Not a hazardous substance or mixture.

GHS label elements, including precautionary statements

Not a hazardous substance or mixture.

Other hazards which do not result in classification

Not a hazardous substance or mixture.

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 107.87

Components

Component	CAS no.	Concentration
Silver (EC no.: 231-131-3)	7440-22-4	100 % (weight)
CLASSIFICATIONS: No data available. HAZARDS: No data available.		

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	First Aid Facilities: Maintain eyewash fountain and drench facilities in work area.
If inhaled	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
In case of skin contact	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.
In case of eye contact	If in eyes wash out immediately with water.
If swallowed	If swallowed, do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically based on judgement of doctor and individual reactions of the patient.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

Specific hazards arising from the chemical

Material does not burn.

Special protective actions for fire-fighters

Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Fight fire from safe location.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear appropriate personal protective equipment as specified in section 8.

Methods and materials for containment and cleaning up

Collect material and transfer to glass or metal container for later disposal or salvage.

SECTION 7: Handling and storage

Precautions for safe handling

No special handling conditions.

Wear appropriate personal protective equipment as specified in section 8.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed, protected from moisture and direct sunlight. May be stored under nitrogen to prevent tarnishing.

SECTION 8: Exposure controls/personal protection

Control parameters

CAS: 7440-22-4

Silver

AU/SWA (Australia): 0.1 mg/m³ TWA inhalation; Cal/OSHA: 0.01 mg/m³ PEL inhalation; NIOSH: 0.01 mg/m³ REL inhalation; OSHA: 0.01 mg/m³ PEL inhalation; ACGIH: 0.1 mg/m³ PEL-TWA inhalation; OSHA: 0.01 mg/m³ PEL-TWA inhalation

Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection

Hand Protection: Hand protection should comply with AS 2161 Industrial Safety Gloves and Mittens (Excluding Electrical and Medical Gloves).

Body protection

Body Protection: Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Respiratory protection

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Solid
Appearance	Soft, ductile, lustrous, white solid.
Color	No data available.
Odor	Odourless.
Odor threshold	No data available.

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Melting point/freezing point	961 °C
Boiling point or initial boiling point and boiling range	2212 °C
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Oxidizing properties	No data available.
pH	No data available.
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Insoluble.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	No data available.
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 10.53
Relative vapor density	No data available.
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes

No data available.

Further safety characteristics (supplemental)

Other Information: Highest electrical and thermal conductivity of all metals.

Thermal conductivity: 1.01 cal/cm/sec/°C

Absorbs oxygen strongly at the melting point.

Soluble in nitric acid, hot sulfuric acid and alkali cyanide solutions. Insoluble in alkalis.

SECTION 10: Stability and reactivity

Reactivity

Stable under normal conditions of storage and handling.

Chemical stability

Stable.

Possibility of hazardous reactions

Hazardous Polymerization: Will not occur.

Conditions to avoid

Incompatible materials, exposure to air.

Incompatible materials

Strong acids, strong bases, halogens and some halogen compounds, acetylenic compounds.

Hazardous decomposition products

Silver fumes.

SECTION 11: Toxicological information

Information on toxicological effects

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Acute toxicity

Ingestion: May be harmful if swallowed. Effects may be cumulative.

Inhalation: May cause respiratory tract irritation. Inhalation of fumes may cause metal fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, cough, weakness, chest pain, muscle pain and increased white blood cell count.

Skin corrosion/irritation

May cause irritation to skin and skin discolouration.

Serious eye damage/irritation

May cause irritation to eyes.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No information found.

Carcinogenicity

Not listed on IARC - International Agency for Research on Cancer database.

Equivocal tumorigenic agent by RTECS - Registry of Toxic Effects of Chemical Substances.

Reproductive toxicity

No information found.

Specific target organ toxicity (STOT) - single exposure

No data available

Specific target organ toxicity (STOT) - repeated exposure

No data available

Aspiration hazard

No data available

Additional information

Chronic Effects: Repeated or prolonged exposure to dust may cause pneumoconiosis.

Chronic inhalation or ingestion of silver salts may cause argyria characterized by a permanent blue-gray discoloration of the eyes, skin, mucous membranes, and internal organs. This malady results from the accumulation of silver in the body.

Silver: *TOXICITY:

typ. dose mode specie amount unit other

TCLo ihl hmn 1 mg/m3 TFX:SKN

*AQTX/TLM96: Not available

*SAX TOXICITY EVALUATION: THR: An experimental heoplasma via implantation rout

*CARCINOGENICITY:

Tumorigenic Data:

TDLo: mul-rat 330 mg/k3/43W-I

TDLo: imp-rat 2400 mg/kg

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TDL_o: imp-mus 11 mg/kg

TD : imp-rat 2570 mg/kg

*MUTAGENICITY: Not available

*TERATOGENICITY: Not available

*STANDARDS, REGULATIONS & RECOMMENDATIONS:

OSHA: Federal Register (1/19/89) and 29 CFR 1910.1000 Subpart Z

Transitional Limit: PEL-TWA 0.01 mg(Ag)/m³ [610]

Final Limit: PEL-TWA 0.01 mg(Ag)/m³ [610]

ACGIH: TLV-TWA 0.1 mg(Ag)/m³ [610]

NIOSH Criteria Document: None

NFPA Hazard Rating: Health (H): None

Flammability (F): None

Reactivity (R): None

*OTHER TOXICITY DATA:

Review: Toxicology Review-5

Status: "NIOSH Manual of Analytical Methods" Vol. 5, #173, 5, #182

Reported in EPA TSCA Inventory, 1980

SECTION 12: Ecological information

Toxicity

Because of silver's insolubility no ecological problems are expected.

Persistence and degradability

No data available.

Bioaccumulative potential

No data available.

Mobility in soil

No data available.

Results of PBT and vPvB assessment

No data available.

Endocrine disrupting properties

No data available.

Other adverse effects

No data available.

SECTION 13: Disposal considerations

Disposal methods

Product disposal

Elemental silver should be recovered for reuse or recycling.

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Waste treatment

Dispose of according to relevant local, state and federal government regulations.

SECTION 14: Transport information

ADG (Road and Rail)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP

Poison Schedule: NS

Canadian Domestic Substances List (DSL)

Chemical name: Silver

CAS: 7440-22-4

Massachusetts Right To Know Components

Chemical name: Silver

CAS number: 7440-22-4

New Jersey Right To Know Components

Common name: SILVER

CAS number: 7440-22-4

Pennsylvania Right To Know Components

Chemical name: Silver

CAS number: 7440-22-4

SECTION 16: Other information

Further information/disclaimer

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

Preparation information

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia

National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'

Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.

Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.

Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019

Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au

IATA, Dangerous Goods Regulations (DGR)

IMO, International Maritime Dangerous Goods Code (IMDG)