

Safety Data Sheet

Issue Date: 27-Jun-2024

Revision Date: 27-Jun-2024

Version 1

1. IDENTIFICATION

Product Identifier

Product Name Silver Ink

Other means of identification

SDS # SDS-094

Product Code 233006

Synonyms Ag-I, Silver Metal Ink, Silver Metal Paste.

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory chemicals and Manufacture of substances.

Details of the supplier of the safety data sheet

Supplier Address

Nexceris, LLC
404 Enterprise Dr.
Lewis Center, OH 43035
www.nexceris.com

Emergency Telephone Number

Company Phone Number Non-emergency calls/questions: 1-614-842-6606
Fax: 1-614-842-6607

Emergency Telephone (24 hr) INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Appearance Silver liquid

Physical state Liquid

Classification

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1

Signal Word

Warning

Hazard statements

Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction



Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Contaminated work clothing must not be allowed out of the workplace
 Wear protective gloves/eye protection/face protection

Precautionary Statements - Response

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 ON SKIN: Wash with plenty of water and soap
 Take off contaminated clothing and wash it before reuse
 If skin irritation or rash occurs: Get medical advice/attention

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other hazards

Toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms Ag-I, Silver Metal Ink, Silver Metal Paste.

Chemical Name	CAS No.	Weight-%
Silver	7440-22-4	70-95
Terpineol	8000-41-7	5-30

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First Aid Measures

General Advice	If exposed or concerned: Get medical advice/attention.
Eye Contact	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.
Skin Contact	IF ON SKIN: Wash with plenty of water and soap. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention.
Inhalation	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention for further treatment.
Ingestion	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Seek medical attention if symptoms develop.

Most important symptoms and effects

Symptoms Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Not determined.

Hazardous Combustion Products Carbon monoxide. Carbon dioxide (CO₂). Silver/silver oxides.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Use personal protective equipment as required.

Environmental precautions

Environmental precautions Prevent entry into waterways, sewers, basements or confined areas. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Handle in accordance with good industrial hygiene and safety practice. Wash face, hands and any exposed skin thoroughly after handling. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/eye protection/face protection.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Silver 7440-22-4	TWA: 0.1 mg/m ³ dust and fume	TWA: 0.01 mg/m ³ (vacated) TWA: 0.01 mg/m ³	IDLH: 10 mg/m ³ dust TWA: 0.01 mg/m ³ dust

Appropriate engineering controls

Engineering Controls Apply technical measures to comply with the occupational exposure limits. Eyewash stations. Showers.

Individual protection measures, such as personal protective equipment

- Eye/Face Protection** Refer to 29 CFR 1910.133 for eye and face protection regulations.
- Skin and Body Protection** Refer to 29 CFR 1910.138 for appropriate skin and body protection.
- Respiratory Protection** Ensure adequate ventilation, especially in confined areas. Refer to 29 CFR 1910.134 for respiratory protection requirements.
- General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Pine
Appearance	Silver liquid	Odor Threshold	Not determined
Color	Silver		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	Not determined	
Melting Point/Freezing Point	Not determined	
Boiling Point/Boiling Range	Not determined	
Flash Point	Not determined	
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	Not determined	
Flammability Limits in Air		
Upper Flammability Limits	Not determined	
Lower Flammability Limit	Not determined	
Vapor Pressure	Not determined	
Vapor Density	Not determined	
Relative Density	Not determined	
Water Solubility	Not Soluble	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	Not determined	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions.

Chemical Stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to Avoid
Keep out of reach of children.

Incompatible Materials
Strong acids, bases and oxidizing agents; ammonia, acetylene and hydrogen peroxide.

Hazardous Decomposition Products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

- Eye Contact** Causes serious eye irritation.
- Skin Contact** Causes skin irritation.
- Inhalation** Do not inhale.
- Ingestion** Do not ingest.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Terpineol 8000-41-7	= 2900 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	-
Silver 7440-22-4	> 2000 mg/kg (Rat)	-	-

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life with long lasting effects.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Silver 7440-22-4		0.00155 - 0.00293: 96 h Pimephales promelas mg/L LC50 static 0.0062: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.064: 96 h Lepomis macrochirus mg/L LC50 static		0.00024: 48 h Daphnia magna mg/L EC50 Static

Persistence/Degradability

Silver is not biodegradable and is toxic to aquatic life

Bioaccumulation

There is evidence to suggest bioaccumulation of silver will occur.

Mobility

Accidental spillage may lead to penetration in the soil and groundwater. Improper handling and disposal of this material may cause environmental damage.

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

US EPA Waste Number

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Silver 7440-22-4		Included in waste stream: F039	5.0 mg/L regulatory level	

California Hazardous Waste Status

Chemical Name	California Hazardous Waste Status
Silver 7440-22-4	Toxic

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT Not regulated

IATA Not regulated

IMDG
Marine Pollutant Yes

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL/NDSL	EINECS/E LINCS	ENCS	IECSC	KECL	PICCS	AICS
Silver	X	X	X		X	Present	X	X
Terpineol	X	X	X	Present	X	Present	X	X

Legend:

- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
- DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
- EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
- ENCS - Japan Existing and New Chemical Substances
- IECSC - China Inventory of Existing Chemical Substances
- KECL - Korean Existing and Evaluated Chemical Substances
- PICCS - Philippines Inventory of Chemicals and Chemical Substances
- AICS - Australian Inventory of Chemical Substances

US Federal Regulations

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Silver 7440-22-4	1 lb		RQ 1 lb final RQ RQ 0.454 kg final RQ

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Silver - 7440-22-4	7440-22-4	70	1.0

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Silver		X	X	

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Silver 7440-22-4	X	X	X
Ethylcellulose 9004-57-3	X	X	X

16. OTHER INFORMATION

NFPA

Health Hazards
Not determined

Flammability
Not determined

Instability
Not determined

Special Hazards
Not determined

HMIS

Health Hazards
Not determined

Flammability
Not determined

Physical hazards
Not determined

Personal Protection
Not determined

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Revision Note: New Product

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet