



Material Safety Data Sheet

<p>NFPA</p> 	<p>HMIS</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="background-color: #00FFFF;">Health Hazard</td> <td style="text-align: center; border: 1px solid black;">1</td> </tr> <tr> <td style="background-color: #FFC0CB;">Fire Hazard</td> <td style="text-align: center; border: 1px solid black;">0</td> </tr> <tr> <td style="background-color: #FFFF00;">Reactivity</td> <td style="text-align: center; border: 1px solid black;">0</td> </tr> </table>	Health Hazard	1	Fire Hazard	0	Reactivity	0	<p>Personal Protective Equipment</p>  <p>See Section 15.</p>
Health Hazard	1							
Fire Hazard	0							
Reactivity	0							

Section 1. Chemical Product and Company Identification		Page Number: 1
Common Name/ Trade Name	Silver metal	Catalog Number(s). S1040, S1041, S1042, S1044
Manufacturer	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	CAS# 7440-22-4
Commercial Name(s)	Not available.	RTECS VW3500000
Synonym	Silver foil; Silver, granular; Silver shot; Silver metal wool	TSCA TSCA 8(b) inventory: Silver
Chemical Name	Silver	CI# Not applicable.
Chemical Family	Element. (Inert material.)	<p style="text-align: center; margin: 0;"><u>IN CASE OF EMERGENCY</u> <u>CHEMTREC (24hr) 800-424-9300</u></p> <p style="margin: 0;">CALL (310) 516-8000</p>
Chemical Formula	Ag	
Supplier	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	

Section 2. Composition and Information on Ingredients					
			<i>Exposure Limits</i>		
Name	CAS #	TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	% by Weight
1) Silver metal	7440-22-4	0.01			100
Toxicological Data on Ingredients					
<p>Silver metal: ORAL (LD50): Acute: 100 mg/kg [Mouse]. >2000 mg/kg [Rat].</p>					

Section 3. Hazards Identification	
Potential Acute Health Effects	Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.
Potential Chronic Health Effects	<p>CARCINOGENIC EFFECTS: Not available.</p> <p>MUTAGENIC EFFECTS: Not available.</p> <p>TERATOGENIC EFFECTS: Not available.</p> <p>DEVELOPMENTAL TOXICITY: Not available.</p> <p>Repeated or prolonged exposure is not known to aggravate medical condition.</p>

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.
Skin Contact	Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.
Serious Skin Contact	Not available.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Serious Inhalation	Not available.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	Non-flammable.
Auto-Ignition Temperature	Not available.
Flash Points	Not available.
Flammable Limits	Not available.
Products of Combustion	Some metallic oxides.
Fire Hazards in Presence of Various Substances	Not available.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
Special Remarks on Fire Hazards	Not available.
Special Remarks on Explosion Hazards	Contact of metallic silver or soluble silver compounds with acetylene may cause formation of silver acetylide that is sensitive to shock.

Section 6. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill	Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7. Handling and Storage

Precautions	Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids.
Storage	Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Safety glasses. Lab coat. Gloves (impervious).
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	TWA: 0.1 (mg/m ³) from ACGIH (TLV) [United States] TWA: 0.01 (mg/m ³) from OSHA (PEL) [United States] TWA: 0.01 from NIOSH TWA: 0.1 (mg/m ³) [Australia] TWA: 0.1 (mg/m ³) [United Kingdom (UK)] Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid. (Metal solid. Lustrous solid.)	Odor	Not available.
Molecular Weight	107.87 g/mole	Taste	Not available.
pH (1% soln/water)	Not applicable.	Color	Not available.
Boiling Point	2212°C (4013.6°F)		
Melting Point	961°C (1761.8°F)		
Critical Temperature	Not available.		
Specific Gravity	10.49 (Water = 1)		
Vapor Pressure	Not applicable.		
Vapor Density	Not available.		
Volatility	Not available.		
Odor Threshold	Not available.		
Water/Oil Dist. Coeff.	Not available.		
Ionicity (in Water)	Not available.		
Dispersion Properties	Not available.		
Solubility	Insoluble in cold water, hot water. Insoluble in alkali. Soluble in Nitric acid, hot Sulfuric acid.		

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Heat, dust generation, incompatible materials
Incompatibility with various substances	Reactive with oxidizing agents, acids.

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Corrosivity Non-corrosive in presence of glass.

Special Remarks on Reactivity Incompatible with oxalic acid, tartaric acid, acetylene compounds, aziridine, 3-bromopropyne, caroxylic acids, copper + ethylene glycol, electrolytes + zinc; ethylene oxide; ethyl hydroperoxide, iodoform, ozonides, peroxomonosulfuric acid, peroxyformic acid, ammonia, hydrogen peroxide, bromoazide, chlorine, trifluoride, ethyleneimine
Readily reacts with dilute nitric acid, hot concentrated sulfuric acid

Special Remarks on Corrosivity Not available.

Polymerization Will not occur.

Section 11. Toxicological Information

Routes of Entry Inhalation. Ingestion.

Toxicity to Animals Acute oral toxicity (LD50): 100 mg/kg [Mouse]. >2000 mg/kg [Rat]

Chronic Effects on Humans Not available.

Other Toxic Effects on Humans Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals Lethal Dose (LD) [Mouse] = >10000 mg/kg

Special Remarks on Chronic Effects on Humans Not available.

Special Remarks on other Toxic Effects on Humans Acute Potential Health Effects:
Skin: The material in wool form may cause skin irritation by mechanical action. The material in granular form may cause skin irritation by mechanical action. It may be imbedded in the skin following dermal exposure. The material in shot or foil form is not expected to cause skin irritation.
Eyes: The material in granular form may cause eye irritation by mechanical action if smaller particles become airborne. If it becomes airborne, it may be deposited into the eyes forming permanent blue-grey stains in the eyes. The material in foil, shot form, or wool form is not an eye irritation hazard and will not cause eye irritation.
Inhalation: The material in granular form may cause respiratory tract irritation by mechanical action if smaller particles become airborne. If the material in granular form becomes airborne, it may be deposited into the lungs following inhalation. A silver "tattoo" of nasal mucosa may also occur. It may cause pulmonary edema. The material in foil or shot form does not pose an inhalation hazard.
Ingestion: Can cause gastrointestinal distress, abdominal pain, vomiting rigidity, convulsions, dizziness, gait disorders. Material in foil form is not expected to be an ingestion hazard since it unlikely to be ingested.
Chronic Potential Health Effects:
Chronic exposure to silver in the granular form may cause Argyria, a gray-blue pigmentation of the skin or organs due to accumulation of impregnated metallic silver powder or granules. Repeated or prolonged ingestion may also cause kidney damage.

Section 12. Ecological Information

Ecotoxicity Not available.

BOD5 and COD Not available.

Products of Biodegradation Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation Not available.

Section 13. Disposal Considerations

Waste Disposal Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification Not a DOT controlled material (United States).

Identification Not applicable.

Special Provisions for Transport Not applicable.

DOT (Pictograms)

**Section 15. Other Regulatory Information and Pictograms**

Federal and State Regulations

New York release reporting list: Silver metal
 Pennsylvania RTK: Silver metal
 Minnesota: Silver metal
 Michigan critical material: Silver metal
 Massachusetts RTK: Silver metal
 New Jersey: Silver metal
 New Jersey spill list: Silver metal
 Louisiana spill reporting: Silver metal
 California Director's List of Hazardous Substances: Silver metal
 TSCA 8(b) inventory: Silver metal
 SARA 313 toxic chemical notification and release reporting: Silver metal
 CERCLA: Hazardous substances.: Silver metal: 1000 lbs. (453.6 kg)

California Proposition 65 Warnings

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.
 California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Other Regulations

EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 231-131-3).
 Canada: Listed on Canadian Domestic Substance List (DSL).
 China: Listed on National Inventory.
 Japan: Not listed on National Inventory (ENCS).
 Korea: Listed on National Inventory (KECI).
 Philippines: Listed on National Inventory (PICCS).
 Australia: Listed on AICS.

Other Classifications

WHMIS (Canada) Not controlled under WHMIS (Canada).

DSCL (EEC) This product is not classified according to the EU regulations. Not applicable.

HMIS (U.S.A.)

Health Hazard	1
Fire Hazard	0
Reactivity	0
Personal Protection	B

National Fire Protection Association (U.S.A.)

Health



Flammability

Reactivity

Specific hazard

WHMIS (Canada) (Pictograms)



DSCL (Europe)
(Pictograms)



TDG (Canada)
(Pictograms)



ADR (Europe)
(Pictograms)



Protective Equipment



Gloves.



Lab coat.



Not applicable.
Safety glasses.

Section 16. Other Information

MSDS Code S3350

References Not available.

Other Special Considerations Not available.

Validated by Sonia Owen on 6/28/2013.

Verified by Sonia Owen.

Printed 6/28/2013.

CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.