

**SAFETY DATA SHEET
FOR
THORN SMITH LABORATORIES**

SECTION 1 - IDENTIFICATION

Trade Name: **Silver Alloy** for Ag, Cu
Catalog Numbers: 80-1480, 80-1485, 80-1487, 80-1488, 80-1489
Product Description: Analyzed Quantitative Unknowns
Manufacturer: Auric Enterprises, Inc.
d/b/a Thorn Smith Laboratories
Address: 7755 Narrow Gauge Road
Beulah, MI 49617
Phone Number: 231-882-4672
SDS Number: TSL-032

SECTION 2 – HAZARDS IDENTIFICATION

Classification of Substance or Mixture: Not a hazardous substance or mixture as packaged in 10g student vials or 100g containers.

GHS Label Elements, including precautionary statements: Not a hazardous substance or mixture as packaged in 10g student vials or 100g containers.

Hazards not otherwise classified (HNOC) or not covered by GHS: None

Potential Effects of Acute Exposure to Material:

COPPER & ZINC: (as Oxide): Inhalation overexposure to copper or zinc oxide may cause metal fume fever characterized by fever and chills (i.e. flu-like symptoms) which appear 4-6 hours after exposure with no long-term effects.

Potential Effects of Chronic Exposure to Material:

Inhalation of copper fumes may result in metal fume fever with atrophic changes in nasal mucous membranes. Certain Nickel compounds have been implicated to be carcinogenic. Ingestion can result in metallic taste in mouth, dryness or irritations of the throat followed by coughing, shortness of breath, nausea, fever body aches, and chills. Individuals with impaired pulmonary functions or illness may have symptoms exacerbated by fume irritants.

SECTION 3 – COMPOSITION AND INFORMATION ON INGREDIENTS

Silver

Formula:	Ag
CAS No.:	7740-22-4
Formula Weight:	107.87
Synonyms:	Argentum, Shell Silver

Copper

Formula:	Cu
CAS No.:	7440-50-8
Formula Weight:	63.54
Synonyms:	Bronze powder, copper bronze

SECTION 4 – FIRST AID MEASURES

Eye Contact: Do not rub eye(s). Flush with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. If irritation persists, seek medical attention.

Skin Contact: Maintain good personal hygiene. Remove any contaminated clothing. Wipe off excess from skin. Immediately wash skin with soap and water for at least 5 minutes. Get medical attention if irritation develops or persists.

Inhalation: If signs of toxicity are observed, move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician immediately.

Ingestion: If particles are ingested, give 1 – 2 glasses of water or milk. Induce vomiting only if victim is conscious and has not convulsed. Seek medical attention promptly.

Note to Physician: None of the components are acutely toxic by ingestion, nor are they absorbed through the skin. Extensive or prolonged skin contact may cause dermatitis and/or argyria.

SECTION 5 – FIRE FIGHTING MEASURES

Flammability: Non-Flammable

Flash Points: Not Applicable

Auto-Ignition: Not Applicable

Flammable Limits: N/A

Extinguishing Media: Use dry chemical. Do not use water.

Fire Fighting Procedure: Firefighters should wear self-contained breathing apparatus and protective clothing to prevent inhalation or contact with skin and eyes.

Hazardous Combustion Products: None

Special Fire Fighting: Do not use water on molten material.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: If a finely-divided form of the products is spilled, clean up spillage so as to minimize dispersion of dust. Wet sweeping or vacuuming using HEPA filtration are recommended. Dispose in accordance to all applicable local, state and federal environmental regulations.

SECTION 7 – HANDLING AND STORAGE

Storage Temperatures: Store at ambient temperatures.

Storage: Store away from incompatible materials.

Shelf Life: Unlimited in tightly closed container. Suitable for any general chemical storage area.

Special Sensitivity: No information available.

Precautions to be taken in handling and storage: Store in accordance with all local, state, and federal environmental regulations.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection (Specify Type): None where adequate ventilation conditions exist. If airborne concentration is high, use an appropriate respirator or dust mask.

Protective Gloves: Wear protective gloves.

Eye Protection: Wear chemical safety glasses.

Ventilation To Be Used: Use adequate general or local exhaust ventilation to keep fume or dust levels as low as possible.

☒ Local Exhaust ☒ Mechanical (General) ☐ Special

☐ Other (Specify)

Other Protective Clothing and Equipment: Wear clean body-covering clothing. Emergency showers and eye wash stations should be available.

Hygienic Work Practices: Avoid contact with eyes, skin, and clothing. Avoid breathing dust. Keep container closed when not in use. Use with adequate ventilation. Wash thoroughly after handling.

Ingredient Exposure Limits:

Silver

ACGIH TLV: 0.1 mg/m³ TWA (metal)

OSHA PEL: 0.01 mg/m³ TWA

Copper

ACGIH TLV: 0.2 mg/m³ TWA (fume); 1 mg/m³ TWA (dusts and mists)

OSHA PEL: 0.1 mg/m³ TWA (fume); 1 mg/m³ TWA (dusts and mists)

Zinc

ACGIH TLV (as ZnO): 2 mg/m³ TWA; 10 mg/m³ STEL (both are respirable fractions)

OSHA PEL: 5 mg/m³ TWA (as ZnO fume)

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Solid

Color: Light to dark bronze.

Odor: Odorless

Molecular Weight: N/A

Boiling Point: N/A

Melting Point: 1235-1545°F (670-840°C)

Specific Gravity: 8.4-10.3

Solubility in Water: Insoluble

Water Reactive: No

Vapor Density (Air-1): 8.92 (Cu)

Evaporation Rate (-1): N/A

SECTION 10 – STABILITY AND REACTIVITY

STABILITY: ☒ Stable ☐ Unstable

Conditions to Avoid: Silver and copper can form unstable acetylides if in contact with acetylene gas.

Incompatibility (Materials to avoid): Strong oxidizers, ammonia, azides, nitric acid, ethylene imine, chlorine trifluoride, sulfuric acid, carbon disulfide, peroxides, peroxyformic acid, oxalic acid, tartaric acid, 1-bromo-2-propyne, permonosulfuric acid, bromates, chlorates, and iodates of alkali and alkali earth metals, halogens, hydrazine mononitrate, hydroxylamine, selenium, tellurium.

Conditions of Reactivity: No information found.

Hazardous Decomposition Products: Heating to elevated temperatures may liberate metal/metal oxide fumes.

HAZARDOUS POLYMERIZATION: _____ May Occur ☒ Will Not Occur

SECTION 11 – TOXICOLOGICAL INFORMATION

Toxicity Data:	Poison to humans by ingestion (Cu).
Silver	LD50: >2000 mg/kg (oral-rat)
Copper	LD50: No Data Available
Zinc	LD50: No Data Available

Chronic Toxic Effects: Inhalation of copper fumes may result in metal fume fever with atrophic changes in nasal mucous membranes. Chronic overexposure by inhalation and/or ingestion may aggravate pre-existing diseases of the liver, kidneys, gastrointestinal system and nervous system.

Acute Toxic Effects: COPPER & ZINC: (as Oxide): Inhalation overexposure to copper or zinc oxide may cause metal fume fever characterized by fever and chills (i.e. flu-like symptoms) which appear 4-6 hours after exposure with no long-term effects. Pre-existing pulmonary diseases (e.g. bronchitis, emphysema) may be aggravated by inhalation overexposure, particularly as fume.

Extremely Hazardous Substance: No

CERCLA Hazardous Substance: Yes

SARA 313 Toxic Chemicals: Yes

TSCA Inventory: Yes (Ag) - No (Cu)

SECTION 12 – ECOLOGICAL INFORMATION

Not Known

SECTION 13 – DISPOSAL CONSIDERATIONS

Dispose of in accordance with all applicable local, state and federal environmental regulations.

SECTION 14 – TRANSPORTATION INFORMATION

Domestic (D.O.T.)

Proper Shipping Name: Chemicals, n.o.s.

International (T.M.O.)

Proper Shipping Name: Chemicals, n.o.s.

Air (I.C.A.O.)

Proper Shipping Name: Chemicals, n.o.s.

SECTION 15 – REGULATORY INFORMATION

Not regulated.

Acute: Yes Chronic: Yes Flammability: No Pressure: No Reactivity: No

Ingredient (s) – US Regulatory Information:

Silver SARA Title III – Section 313 Form “R”/TRI Reportable Chemical

Copper SARA Title III – Section 313 Form “R”/TRI Reportable Chemical

Canadian Regulatory Information:

All components of these products are listed in the DSL. WHMIS Class(es) and Division(s): None

Components on Ingredients Disclosure List:

Silver elemental (CASRN 7440-22-4)

Copper elemental (CASRN 7440-50-8)

NFPA Rating: Health-1 Flammability-0 Reactivity-0

HMIS Rating: No Information Available

SECTION 16 – OTHER INFORMATION

Date Prepared: December 12, 1980

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