

DATE: January 1, 2020

1. IDENTIFICATION OF PRODUCT & COMPANY INFORMATION

1.1 Product Identifier

Product Name:	Silver Tungsten Forms & Scrap
Chemical Name:	Tungsten (W) Matrix filled with Silver (Ag)
CAS Number:	Not applicable
EINECS No.:	Not applicable
Molecular Weight:	Not applicable
REACH Registration No.:	Not applicable

1.2 Relevant Identified Uses of Product and Uses Advised Against

Identified Uses:	Resistance welding electrodes, EDM & ECM Electrodes, Electrical Contacts
Uses Advised Against:	None known

1.3 Details of the Supplier of the Product Information Sheet

Name:	Sherbrooke Metals Corporation
Address:	36490 Reading Avenue Willoughby, Ohio 44094
Phone:	(440) 942-3520
Fax:	(440) 942-5580

1.4 Emergency Phone Number

(800) 922-7437

2. HAZARDS IDENTIFICATION

General Statement: Because of its solid form, this product does not pose a hazard, however, if exposed to grinding dust, some skin or eye irritation may occur. To prevent minimal irritation, always use appropriate protective equipment, and wash thoroughly after handling.

2.1 Classification of the Product:

Per OSHA CFR 1910.1200 HCS Not classified

2.2 Label Elements

Hazard Pictograms:	None
Signal Word:	Not applicable
Hazard Statements:	None
Precautionary Statements:	None

2.3 Other Hazards:

Per PBT or vPvB assessment, neither is applicable

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Ingredients

	<u>Tungsten</u>	<u>Silver</u>
EINECS No.	231-143-9	231-131-3
CAS No.	7440-33-7	7440-22-4
% by Weight		
Classification for DSD/CLP	In the particle size used, it is not classified per DSD/CLP	Silver is not classified under DSD/CLP

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

Copper-Tungsten products do not produce large volumes of dust, however, when ground wet or dry, will produce dust which may be inhaled or ingested and may cause irritation to the skin or eyes.

EYES:	Rinse eye under clean running water until irritation goes away. If irritation continues, see a doctor.
SKIN:	Clean skin with soap and water, then rinse thoroughly. If irritation continues, see a doctor.
INGESTION:	Do not induce vomiting. Rinse mouth with clean water. Call for medical help as soon as possible.
INHALATION:	Remove to fresh air. Call a doctor if needed.

4.2 Most Important Symptoms and Effects, both Acute and Delayed

The dust or mist generated during dry or wet grinding may cause eye or skin irritation. If too much dust is inhaled, a slight respiratory irritation could occur. If these symptoms continue, see a doctor.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information is available.

5. FIREFIGHTING MEASURES

5.1 Extinguishing Media

Silver-Tungsten products do not pose a fire hazard; however, the area around them may pose a problem. Research and use the proper extinguisher for the materials around the area.

5.2 Special Hazards Arising from the Substance or Mixture

The Silver-Tungsten part, by itself, does not pose a fire hazard. During machining or grinding, dust may occur. Do not allow the dust to pile up, as it could ignite. If the dust comes in touch with an ignition source (match), it could catch fire. Fight any fire with a CO2 powder extinguisher. Fumes from any fire may cause inhalation problems. If the fire persists, call your local fire department.

5.3 Advice for Firefighters

Silver-Tungsten will begin to oxidize above 1200°F. Firefighters should wear a fully protective suit and self-contained respiratory equipment if any fumes are detected.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment, and Emergency Procedures

Silver-Tungsten, in its finished product state, does not emit any hazards that need accidental release measures. During the machining process, however, dust and grinding mist may occur. To avoid inhalation, ingestion, or skin/eye irritation, always wear proper protective equipment such as safety glasses, gloves, long sleeve shirts, and respiratory equipment, if needed. Ensure adequate ventilation.

6.2 Environmental Precautions

Use adequate dust collection equipment to prevent the dust from getting into the environment.

6.3 Methods and Material for Containment and Clean-Up

Silver-Tungsten and its scrap by-products (grinding, sludge, turnings) can be recycled. Be sure to ship product in suitable containers for either reclaim or disposal. For disposal, only use local, state, and federally approved sources.

6.4 Reference to Other Sections

See section 8 for information on personal protection equipment and section 13 for disposal information.

7. HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Silver-Tungsten parts do not require special safety handling or storage during standard operating conditions. It is suggested, however, that the use of gloves and eye protection be heeded. Minimize dust generation, and keep the work area well-ventilated.

7.2 Conditions for Safe Storage – Including any Incompatibilities

No special handling or storage is needed.

7.3 Specific End Use(s)

Resistance welding electrodes, EDM and ECM electrodes, electrical contacts, Telcom heat sinks or packages

8. EXPOSURE CONTROL / PERSONAL PROTECTION

The exposure parameters listed below are a compilation of those for silver-tungsten, silver powder, and tungsten powder.

8.1 Control Parameters

Ingredient	<u>Tungsten</u>		<u>Silver</u>	
	TWA	STEL	TWA	STEL
OSHA PEL mg/m ³	5 insoluble 1 soluble	10	0.01	
ACGIH TLV mg/m ³	5 insoluble 1 soluble	10 insoluble 3 soluble	0.1 (fume)	
NIOSH REL mg/m ³	5	10	0.01	

8.2 Exposure Controls

Physical Plant Controls: Good plant ventilation and dust collection will help to prevent excessive dust in the plant atmosphere.

Personal Protection Measures:

EYE/FACE PROTECTION	Safety glasses should be used when appropriate. Full face protection, when needed, should be used.
SKIN PROTECTION	Protective gloves that are made of material impermeable and resistant to the materials with which they are working. In most cases, the gloves will be made of PVC, butyl, rubber, or neoprene.
RESPIRATORY PROTECTION	If the plant is well-ventilated, it will not be necessary. Because grinding dust is generated, a P-series particulate respirator may be needed under extreme conditions.
VENTILATION	The work area should be adequately ventilated to ensure dust levels in the air are below the required TLV and PEL levels.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Silver colored
Odor:	Odorless
Odor threshold:	Not applicable
pH Value:	Not applicable

<u>Change in Condition</u>	<u>Tungsten</u>	<u>Silver</u>
Melting point/range	3390-3423°C	960°C
Boiling point/range	5555-5700°C	1951°C
Flash point	Not applicable	
Evaporation Rate	Not applicable	
Flammability	Non-Flammable	
Explosion limits	Not applicable	
Vapor pressure	Not applicable	
Vapor density	Not applicable	
Relative density	13.00-16.00 g/cm ³	
Solubility in Water	Insoluble	
Partition Coefficient	Not applicable	
Auto Ignition	Not applicable (to small particle size)	

<u>Decomposition</u>	<u>Tungsten</u>	<u>Silver</u>
Temperature	Above melting 3390-3423°C	Above melting 960°C
Viscosity	Not applicable	
Explosive Properties	Not Explosive	
Oxidizing Properties	Not Oxidizing	

10. STABILITY AND REACTIVITY

10.1 Reactivity	Non-reactive
10.2 Chemical Stability	Stable Chemically
10.3 Possibility of Hazardous Reactions	Not applicable
10.4 Conditions to Avoid	Accumulation of grinding dust
10.5 Incompatible Materials	Avoid Alkalis & Acids
10.6 Hazardous Decomposition Products	Toxic Metal Oxide Smoke or Fumes

11. TOXICOLOGICAL INFORMATION

Silver-Tungsten products, as processed, do not present a health hazard.

Point of Interest

Tungsten compounds are considered somewhat toxic, however, the product itself does not constitute an important health hazard. On the other hand, prolonged or chronic exposure to silver dust may cause argyria, or argyrosis, which presents through a blue or blueish-gray coloration of the skin, mucous membranes, and/or the conjunctiva (the inner lining of the eyelid). This condition will continue to build up through continued exposure, and does not resolve once exposure is eliminated. Neither Tungsten nor Silver is classified as carcinogenic.

12. ECOLOGICAL INFORMATION

Silver-Tungsten products do not present an environmental hazard as produced. Silver, however, is extremely toxic to organisms in aquatic environments.

12.1 Persistence and Degradability	Silver-Tungsten, as processed, does not present an environmental hazard. Silver is non-biodegradable, and as stated before, is highly toxic to aquatic organisms.
12.2 Bioaccumulative potential	Silver-Tungsten, as processed, does not present an environmental hazard. Bioaccumulation of silver has been shown to occur over time.
12.3 Mobility in soil	Silver-Tungsten, as processed, does not present an environmental hazard. If a spill of pure silver occurs, seepage into soil and water sources may occur. Always handle & dispose of pure silver properly to avoid environmental damage.
12.4 Results of PBT & vPvB Assessment	Not applicable
12.5 Other Adverse Effects	None known

13. DISPOSAL CONSIDERATIONS

The constituents of Silver-Tungsten are valuable in their own right. Efforts should be taken to find local, state, and federally approved reclamation and recycling companies. Should not enough Silver-Tungsten be available for recycling, check with your local, state, and federal regulations for proper disposal procedures.

It is the responsibility of the owner of Silver-Tungsten waste to properly dispose of said waste.

14. TRANSPORTATION INFORMATION

Silver-Tungsten product is neither classified nor regulated.

15. REGULATORY INFORMATION

15.1 Safety, Health, and Environmental Regulations/Legislation Specific for the Substance or Article

National Regulations: See 40 CFR 372 for reporting requirements.

U.S. Superfund Amendments and Reauthorizations Act (SARA) Title III

SARA (311/312) Hazardous Categories

SARA 313: This product contains the following SARA 313 Toxic Chemical Listing

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Concentration</u>
Silver	7440-22-4	>1%

TSCA: The components in the material (Silver-Tungsten) are registered under the Toxic Substance Control Act.

15.2 Chemical Safety Assessment

Neither CSR (Chemical Safety Reports) nor CSA (Chemical Safety Assessments) are required.

16. OTHER INFORMATION

Revision(s): January 1, 2016 New SDS

References:

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