Section 1: Company and Product Identification

Product Name: Silver (I) p-toluene sulfonate

Product Code: 9056

Company: Colonial Metals, Inc.
Building 20
505 Blue Ball Road
Elkton, MD 21921 United States
Company Contact: EHS Director
Telephone Number: 410-398-7200
FAX Number: 410-398-2918
E-Mail: info@colonialmetals.com
Web Site: www.colonialmetals.com

Emergency Response: Supplier Emergency Contacts & Phone Number
Chemtrec: 800-424-9300
World Wide - Call COLLECT to U.S: 703-527-3887

Section 2: Hazards Identification

Hazard Pictograms:

Signal Word: Warning

Hazard Category:
- Acute tox, oral Cat 5
- Skin corrosion/irritation Cat 2
- Serious eye damage/eye irritation Cat 2
- Specific target organ tox, single exp. Cat 3 (resp irrit)

Hazard Statements:
- H303: May be harmful if swallowed
- H315: Causes skin irritation
- H319: Causes serious eye irritation
- H335: May cause respiratory irritation

Precautionary Statements:
- P260: Do not breathe dust/fume/gas/mist/vapors/spray
- P264: Wash thoroughly after handling
- P270: Do not eat, drink or smoke when using this product
- P271: Use only outdoors or in a well-ventilated area
- P272: Contaminated work clothing should not be allowed out of the workplace
- P280: Wear protective gloves/protective clothing/eye protection/face protection
- P302+352: IF IN EYES: Rinse cautiously with water for several minutes. Remove
- P321: Specific treatment (see … on this label)
- P332+313: If skin irritation occurs: Get medical advice/attention
- P337+313: If eye irritation persists get medical advice/attention
- P362: Take off contaminated clothing and wash before reuse
- P403+233: Store in a well ventilated place. Keep container tightly closed
- P405: Store locked up
- P501: Dispose of contents/container in accordance with local/regional/national/international rules.

Hazards not otherwise classified: May cause argyria (a slate-gray or bluish discoloration of the skin and deep tissues due to the deposit of insoluble albuminate of silver). To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Section 3: Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous substance (name)</th>
<th>Hazard Category</th>
<th>CAS#</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver (I) p-toluene sulfonate</td>
<td>Irritant</td>
<td>16836-95-6</td>
<td>99 - 100</td>
</tr>
</tbody>
</table>

Product Name: Silver (I) p-toluene sulfonate  
Chemical Formula: Ag(O3SC7H7)  
Synonyms: Silver tosylate, p-Toluenesulfonic acid silver salt

Section 4: First Aid Measures

General Info: Consult a Physician. Show this safety data sheet to the doctor in attendance.

Notable Exposure Irritation to skin, eyes and areas of contact. If discomfort occurs or persists, contact a physician symptoms:

If ingested: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician

If inhaled: Remove the victim from the contaminated area while protecting yourself from exposure by wearing an appropriate respirator. Put a similar respirator on the victim if possible. Get medical attention immediately.

Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do.

Skin contact: Flush area for 15 minutes with water and wash with soap and water. Remove contaminated clothing and shoes and wash before reuse.

Section 5: Fire Fighting Measures

General Info: Use NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Do not direct a solid stream of water or foam into burning molten material; this may cause spattering and spread the fire.

Extinguishing Method / Equipment: Use water spray, carbon dioxide, dry chemical powder, or appropriate foam.

Decomposition Info: Silver (I) p-toluene sulfonate can decompose to emit toxic fumes under fire conditions. Carbon oxides, Sulphur oxides, Silver/silver oxides

Section 6: Accidental Release Measures

Personal precautions, protective equipment and procedures: Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate respiratory protective equipment and clothing during clean-up. Avoid breathing dust. Ventilate area if easy to do so. Contact local authorities if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Containment Large Spills: Contain actively spilling material if safe and easy to do so. Do not let product enter drains. Sweep up and placed in a proper vessel for recovery or disposal. Avoid raising dust.

Procedures: Ventilate and wash spill site after cleanup is complete.

Small Spills: Sweep or soak up and place in sealed container. Taking care to avoid dusting.

Cleanup Procedures: Contain spillage and then collect with an electrically protected vacuum cleaner or by wet brushing and place in container for disposal according to local regulations.

Section 7: Handling and Storage

Safe Handling: Do not handle until all safety precautions have been read and understood. Keep containers tightly closed. Ensure adequate ventilation. Avoid creating and breathing dust/vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment and wash thoroughly after handling. Keep away from ignition sources.

Recommendations for Storage: Store in cool, dry area in a tightly closed product container away from sources of ignition or flame. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Incompatibilities: Strong oxidizing agents, Strong acids
Section 8: Exposure Control / Personal Protection

General / Ventilation: Local Exhaust: Required in handling area

Engineering Mechanical: Desirable to insure concentration of material below TLV/TWA levels

Controls: Other: Closed Ventilation system - Dust (Laboratory Fume Hood)

Work Clothing: Protective work clothing which covers skin and prevents exposures.

Eye/face protection: Wear safety glasses with side shields or goggles or face shield.

Skin Protection: Wear chemical resistant gloves.

Respiratory NIOSH approved chemical cartridge respirator for particulates and dust or self-contained breathing protection apparatus with full face shield.

Additional Information: Observe good chemical hygiene practices. Do not smoke or eat while using this product. Wash hands or exposed skin after using the product.

Section 9: Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>Solid</td>
</tr>
<tr>
<td>Melting Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>N/A</td>
</tr>
<tr>
<td>Color</td>
<td>Light Grey Powder</td>
</tr>
<tr>
<td>pH</td>
<td>N/A</td>
</tr>
<tr>
<td>Molecular Wt.</td>
<td>279.09</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>N/A</td>
</tr>
<tr>
<td>Flash Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Part. Coeff (n-octanol/water)</td>
<td>N/A</td>
</tr>
<tr>
<td>Upper Flam Limits</td>
<td>N/A</td>
</tr>
<tr>
<td>Lower Flam Limits</td>
<td>N/A</td>
</tr>
<tr>
<td>VOC Content (lbs/gal)</td>
<td>N/A</td>
</tr>
<tr>
<td>Viscosity</td>
<td>N/A</td>
</tr>
<tr>
<td>Autoignition Temp</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Section 10: Stability and Reactivity

General: This product is stable and non-reactive under normal conditions of use. Product is not subject to hazardous polymerization. Avoid open flame and ignition sources.

Stability: Stable

Conditions to Avoid: Exposure to air, light, and moisture

Incompatible materials: Strong oxidizing agents, Strong acids

Decomposition products: Carbon oxides, Sulphur oxides, Silver/silver oxides

Section 11: Toxicological Information

General Information: May cause argyria, a slate gray or bluish discoloration of the skin and deep tissues due to the deposit of insoluble albuminate or silver.

To the best of our knowledge the chemical, physical, and toxicological effects of this compound have not been thoroughly investigated.

Toxicological Information (product):

Likely Routes of Exposure: Eye Contact

Skin Contact

Inhalation

Ingestion - possible, but considered unlikely.

Toxicological Information (contained substances)

Carcinogenicity or mutagenicity: To the best of our knowledge the chemical, physical, and toxicological effects of this compound have not been thoroughly investigated.

Sensitization: Product is not expected to be a sensitizer.
Section 12: Ecological Information

General information: No data available
Aquatic toxicity: No specific data available.
Degradation / Mobility info: No specific data available.
Bioaccumulative potential: No specific data available.

Section 13: Disposal Information

Product disposal: Place in a sealed container. Consult Federal EPA, State and local regulations for proper disposal/recycle/reclamation
NOTE: Chemical additions, processing, or otherwise altering this material may make the waste management information presented above incomplete, inaccurate, or otherwise inappropriate.

Container disposal: Treat empty containers with extra care. Consult waste contractor.

Section 14: Transport Information

DOT: Proper Shipping Name:
Non-Hazardous/ Not Dangerous Goods
IMO/IMDG: Same as DOT
IATA: Same as DOT
Comments: None

Section 15: Regulatory Information

TSCA: This product is TSCA listed.
SARA: SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:
Silver p-toluenesulfonate CAS-No. 16836-95-6 Revision Date 2007-07-01

SARA 311/312 Hazards
Acute Health Hazard

Right to Know
Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components
Silver p-toluenesulfonate CAS-No. 16836-95-6 Revision Date 2007-07-01

New Jersey Right To Know Components
Silver p-toluenesulfonate CAS-No. 16836-95-6 Revision Date 2007-07-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Section 16: Other Information

<table>
<thead>
<tr>
<th>NFPA Rating</th>
<th>HMIS Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health: 2</td>
<td>Health: 2</td>
</tr>
<tr>
<td>Fire: 0</td>
<td>Fire: 0</td>
</tr>
<tr>
<td>Reactivity: 0</td>
<td>Reactivity: 0</td>
</tr>
<tr>
<td>Personal Protection: C</td>
<td></td>
</tr>
</tbody>
</table>
Disclaimer: In compliance with the OSHA Hazard communication Standard, 29 C.F.R 1910.1200, we are providing you with a Materials Safety Data Sheet (MSDS) for the hazardous material you are purchasing.

It is your responsibility to educate your employees on the safe use of the hazardous material. With this in mind, a copy should be forwarded to the supervisor of the user or to the user themselves, and copy should be retained in your files for future reference.

Colonial Metals, Inc. makes no presentation as to the accuracy of the information in the MSDS. The information is believed to be correct; however, you (the customer), should perform your own investigation and independent verification. If you resell the product, you are responsible to forward the information in the MSDS to your customer.

Colonial Metals, Inc.

SDS Author: John Kerchner

Version Date: 7/30/2015