1. IDENTIFICATION OF SUBSTANCE

1.1 PRODUCT NAME(S) Silver-Coated Hollow Glass Microspheres

1.2 PRODUCT IDENTIFIER(S) HGMS-AG, M-18-AG, M-40, M-60

1.3 INTENDED USE Industrial and research applications

1.4 SUPPLIER’S DETAILS Cospheric LLC, PO Box 6762, Santa Barbara, CA 93160
   info@cospheric.com  www.cospheric.com

1.5 EMERGENCY TELEPHONE +1-805-687-3747 Monday-Friday, 08:00-17:00 PST [UTC-8]

2. HAZARDS IDENTIFICATION

2.1 HAZARD CLASSIFICATION

GHS Classification

- H400 Very toxic to aquatic life
- H410 Very toxic to aquatic life with long lasting effects


2.3 HAZARDS NOT OTHERWISE CLASSIFIED Dust may cause irritation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>INGREDIENT</th>
<th>CAS NUMBER</th>
<th>% (W/W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver</td>
<td>7440-22-4</td>
<td>&gt;50%</td>
</tr>
<tr>
<td>Glass oxide microspheres</td>
<td>308066-94-6</td>
<td>&lt;50%</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES

- **Eye contact** Rinse with plenty of water. Seek medical advice if symptoms persist.
- **Skin contact** If symptoms occur, wash with soap and water.
- **Inhalation** If symptoms occur, move to fresh air. Seek medical advice if necessary.
- **Ingestion** If symptoms occur, seek medical advice.

4.2 IMPORTANT SYMPTOMS/EFFECTS, ACUTE OR DELAYED

Inhalation of high concentrations of dust may cause respiratory irritation.

5. FIRE-FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA

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

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Product not classified as flammable, but will burn on contact with flame or exposure to high temperature.

5.3 SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS

As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved) and full protective gear.
SAFETY DATA SHEET

SILVER-COATED HOLLOW GLASS MICROSPHERES

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE Equipment AND EMERGENCY PROCEDURES

Follow precautions for safe handling described in this safety data sheet (Section 8).

6.2 ENVIRONMENTAL PRECAUTIONS

Avoid release to the environment. Dispose of any waste according to prescribed federal, state, local and competent authority guidelines.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEAN UP

Collect spillage with shovel, broom or the like. Transfer to a container for disposal.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

Avoid handling practices that cause dust formation. Avoid inhalation of high concentrations of dust. Observe occupational exposure limits and minimize the risk of inhalation of dust.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Store in tightly closed original container in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

<table>
<thead>
<tr>
<th>Nuisance Dust (Particles Not Otherwise Regulated)</th>
<th>OSHA Permissible Exposure Limit (PEL)</th>
<th>Respirable fraction</th>
<th>5mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver</td>
<td>Permissible Exposure Limit (PEL) (dust)</td>
<td>Total dust</td>
<td>15mg/m³</td>
</tr>
<tr>
<td>Silver</td>
<td>Permissible Exposure Limit (PEL) (dust)</td>
<td>Total dust</td>
<td>0.1mg/m³</td>
</tr>
<tr>
<td>ACGIH</td>
<td>Threshold Limit Value Time Weighted Average (TLV-TWA)</td>
<td>Total dust</td>
<td>0.1mg/m³</td>
</tr>
</tbody>
</table>

8.2 ENGINEERING CONTROLS

Avoid handling practices that cause dust formation. Use local exhaust ventilation to prevent or control exposure.

8.3 INDIVIDUAL PROTECTION MEASURES (PERSONAL PROTECTIVE EQUIPMENT)

Respiratory protection: When handling practices cause dust formation, select respiratory protection appropriate for the particle size of the material.

Eye/face protection: Chemical goggles.

Skin protection: Wear suitable protective clothing and gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Grey spherical particles
Relative density: Per product specification (<1g/cc)
Softening Temperature: Per product specification
Flammability: Not classified as flammable.
10. STABILITY AND REACTIVITY

Reactivity  Non-reactive under normal conditions of use.
Chemical stability  Stable under normal conditions of use.

11. TOXICOLOGICAL INFORMATION

Likely route(s) of exposure  Dermal, inhalation

SIGNS AND SYMPTOMS OF EXPOSURE

Eye contact  Direct contact with eyes may cause temporary mechanical irritation. Signs and symptoms may include pain, redness.
Skin contact  Direct contact with skin may cause sensitization in hypersensitive individuals. Signs and symptoms may include redness, pain and itching. Prolonged or repeated exposure to silver may cause argyria – gray pigmentation of eyes, skin and mucous membranes.
Inhalation  Inhalation above recommended exposure levels may cause respiratory irritation including cough.
Ingestion  Signs and symptoms may include abdominal pain, vomiting and diarrhea.

TOXICOLOGICAL DATA (SPECIFIC TO SILVER UNLESS NOTED OTHERWISE)

Acute toxicity  Oral LD50>2000 mg/kg (rat)
Skin corrosion/irritation  No information available/not sufficient for classification
Serious eye damage/eye irritation  No information available/not sufficient for classification
Respiratory or skin sensitization  No information available/not sufficient for classification
Germ cell mutagenicity  No information available/not sufficient for classification
Carcinogenicity  Not listed as a carcinogen (OSHA, NTP, IARC)
12. ECOLOGICAL INFORMATION
Toxicity: Contains silver which is toxic to terrestrial and aquatic organisms.
LC₅₀ (96-hr) = 1.2µg/L (Pimephales promelas)
EC₁₀ = 0.19µg/L (Salmo trutta) (OECD 201)

Persistence and degradability: No information available
Bioaccumulation potential: No information available
Mobility in soil: No information available

13. DISPOSAL CONSIDERATIONS
Dispose of any waste according to prescribed federal, state, local and competent authority guidelines. Recover and recycle if possible.

14. TRANSPORTATION INFORMATION
This product is not subject to regulations for the transport of hazardous materials (DOT, IATA, IMO).

15. REGULATORY INFORMATION
This SDS has been prepared to meet the US OHSA Hazard Communication Standard, 29 CFR 1910.1200.

16. OTHER INFORMATION
The information contained in this document is correct to the best of our knowledge at the date of publication. It should not be viewed as all inclusive, but as a guide only. It does not represent any guarantee of the properties of the product. Cospheric LLC shall not be held liable for any damage resulting from handling of or from contact with the above product. For these reasons, it is important that product users carry out their own tests to satisfy themselves as to the suitability of the safety precautions for their own intended applications.

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