Material Safety Data Sheet

Silver Colloids 20, 40, 60, 80, nm

Issue Date (06-21-07)
Review Date (04-12-12)

Section 1: Product and Company Identification
Product Name: Silver Colloids 20, 40, 60, 80, nm
Synonym: None
Manufacturer/Vendor: BBinternational, Cardiff, CF14 5DX, UK
Company Name
Ted Pella, Inc., P.O. Box 492477, Redding, CA 96049-2477
Domestic Phone (800) 237-3526 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)
International Phone (01) (530) 243-2200 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)
Chemtrec Emergency Number 1-800-424-9300 24 hrs a day.

Section 2: Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Principle Hazardous Component(s) (chemical and common name(s)) (Cas. No)</th>
<th>%</th>
<th>OSHA PEL mg/m3</th>
<th>ACGIH TLV mg/m3</th>
<th>NTP</th>
<th>IARC</th>
<th>OSHA regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Silver nitrate (7761-88-8)</td>
<td>&lt; 0.001</td>
<td>0.01</td>
<td>0.01</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>*Sodium citrate dihydrate (6132-04-3)</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Silver(I) nitrate (1:1): RTECS #: VW4725000
Citric acid, trisodium salt RTECS #: GE8300000

Section 3: Hazard Identification

Emergency overview
Appearance: Clear yellow liquid (varies with size)
Immediate effects: ND

Potential health effects
Primary Routes of entry: Ingestion, inhalation, skin and eye contact.
Signs and Symptoms of Overexposure: ND
Eyes: May cause irritation.
Skin: May cause irritation.
Ingestion: ND
Inhalation: ND
Chronic Exposure: ND
Chemical Listed As Carcinogen Or Potential Carcinogen: None
See Toxicological Information (Section11)

**Potential environmental effects**
See Ecological Information (Section 12)

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**Section 4: First Aid Measures**

**If accidental overexposure is suspected**

Eye(s) Contact: In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Skin Contact: In case of skin contact, flush with copious amounts of water.

Inhalation: If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

Ingestion: If swallowed, wash out mouth with water provided person is conscious. Call a physician.

**Note to physician**

Treatment: ND

Medical Conditions generally Aggravated by Exposure: ND

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**Section 5: Fire Fighting Measures**

Flash Point: None

Flammable Limits: None

Auto-ignition point: None

Fire Extinguishing Media: NA

Special Fire Fighting Procedures: NA

Unusual Fire and Explosion Hazards: None

Hazardous combustion products: ND

DOT Class: Not regulated.

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**Section 6: Accidental Release Measures**

Steps to be Taken in Case Material is Released or Spilled: Use absorbent material and collect into container for disposal.

Waste Disposal Methods: Dispose of waste according to Federal, State and Local Regulations.

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**Section 7: Handling and Storage**

Precautions to be Taken in Handling and Storage: Do not freeze.

Storage temperature: Room temperature.

Storage Pressure: NA

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**Section 8: Exposure Controls / Personal Protection**

**Engineering Controls**

Ventilation required: Not required under normal use

**Personal Protection Equipment**

Respiratory protection: Not required under normal use.

Protective gloves: gloves

Skin protection: Clothing
Eye protection: Safety glasses
Additional clothing and/or equipment: ND

**Exposure Guidelines**
See Composition/Information on Ingredients (Section2)

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### Section 9: Physical and Chemical Properties

- **Appearance and Physical State**: Clear yellow liquid (varies with size)
- **Odor (threshold)**: ND
- **Specific Gravity (H₂O=1)**: ~1
- **Vapor Pressure (mm Hg)**: ND
- **Vapor Density (air=1)**: ND
- **Percent Volatile by volume**: ND
- **Evaporation Rate (butyl acetate=1)**: ND
- **Boiling Point**: ND
- **Freezing point / melting point**: ND
- **pH**: ND
- **Solubility in Water**: Soluble
- **Molecular Weight**: NA

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### Section 10: Stability and Reactivity

- **Stability**: Stable
- **Conditions to Avoid**: Freezing
- **Materials to Avoid (Incompatibility)**: ND
- **Hazardous Decomposition Products**: ND
- **Hazardous Polymerization**: Will not occur

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### Section 11: Toxicological Information

- **Results of component toxicity test performed**: ND
- **Human experience**: ND
- **This product does not** contain any compounds listed by NTP or IARC or regulated by OSHA as a carcinogen.

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### Section 12: Ecological Information

- **Ecological Information**: ND
- **Chemical Fate Information**: ND

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### Section 13: Disposal Considerations

- **RCRA 40 CFR 261 Classification**: ND
- Federal, State and local laws governing disposal of materials can differ. Ensure proper disposal compliance with proper authorities before disposal.

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### Section 14: Transportation Information

- **US DOT Information**: Proper shipping name: Not regulated.
- **IATA**: Proper shipping name: Not regulated.
- **IMO**: Proper shipping name: Not regulated.
Marine Pollutant: No
Canadian TDG: Not regulated.

**Section 15: Regulatory Information**

**United States Federal Regulations**
SARA: ND
SARA Title III: None
RCRA: None
TSCA: Components listed in Inventory
CERCLA: < 0.001% Silver nitrate (7761-88-8) RQ = 1 lbs (0.454 Kg)

**State Regulations**
California Proposition 65: No

**International Regulations**
Canada WHMIS: ND
Europe EINECS Numbers: ND

**Section 16: Other Information**
Label Information: ND
European Risk and Safety Phrases: ND
European symbols needed: ND
Canadian WHMIS Symbols:
Hazard Rating: Health: 1; Fire: 0; Reactivity: 1
Estimated Hazard Rating.
(0=least, 1=Slight, 2=Moderate, 3=High, 4=Extreme)

**Abbreviations used in this document**
NE= Not established
NA= Not applicable
NIF= No Information Found
ND= No Data

**Disclaimer**
Ted Pella, Inc. makes no warranty of any kind regarding the information furnished herein. Users should independently determine the suitability and completeness of information from all sources. While this data is presented in good faith and believed to be accurate, it should be considered only as a supplement to other information gathered by the user. It is the User's responsibility to assure the proper use and disposal of these materials as well as the safety and health of all personnel who may work with or otherwise come in contact with these materials.

MSDS Form 0013F1 V2