Safety Data Sheet
According to 1907/2006/EC, Article 31

Revision: 07/22/2020

1. Identification of the substance/mixture and of the company/undertaking
   - **Product Identifier** – Conducting Silver Paint
   - **Article Number** - 60805, 60805T, 60805-500, 60805P, 60805-1000, 60805Q

**Relevant identified uses of the substances or mixture and uses advised against.**
Mounting and grounding of specimens for scanning electron microscopy and other applications calling for physical and electrical connections.

**Details of the supplier of the safety data sheet**

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2. Hazards identification

   - **Classification of the substance or mixture**
   - **Classification according to Regulation (EC) No 1272/2008**

   ![GHS02 flammable](image)
   Flam. Liquid 3  
   H226  
   Flammable liquid and vapor

   ![GHS07 irritant](image)
   STOT 3  
   H336  
   Narcotic effects (single exposure)

   ![GHS09 harmful to the environment](image)
   Haz to Aquatic Env Chronic 2  
   H411  
   Toxic with long lasting effects

**Label elements**

**Labelling according to Regulation (EC) No 1272/2008**

The product has been classified and labelled according to the CLP regulation.

**Hazard Pictograms**

![GHS02 flammable](image)  ![GHS07 irritant](image)  ![GHS09 harmful to the environment](image)
**Signal Word:** Warning

**Hazard Statements:**
- **H226** Flammable Liquid and vapor
- **H336** May cause drowsiness or dizziness
- **H411** Toxic to aquatic life with long lasting effects

**Precautionary Statements:**
- **P233** Keep container tightly closed
- **P235** Keep cool
- **P240** Ground and/or bond container and receiving equipment
- **P241** Use explosion-proof electrical/ventilating/lighting/equipment
- **P242** Use only non-sparking tools
- **P243** Take precautionary measures against static discharge
- **P261** Avoid breathing fumes, mist, vapors and/or spray
- **P271** Use only outdoors or in a well-ventilated area
- **P273** Avoid release to the environment
- **P280** Wear protective gloves/protective clothing/eye protection/face protection
- **P370+P378** In case of fire: Use appropriate media for extinction.
- **P304+P340** If Inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- **P312** Call a poison center or doctor/physician if you feel unwell
- **P303+P361+P353** If on skin: Immediately remove all contaminated clothing. Rinse skin with water/shower
- **P391** Collect spillage
- **P403+P233** Store in a well-ventilated place. Keep container tightly closed.
- **P235** Keep cool
- **P405** Store locked up
- **P501** Dispose of contents and/or container in accordance with local, regional, national, and/or international regulations

**Other Hazards**
Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain. Repeated exposure to silver can cause argyria/argyrosis, a grey-blue discoloration of the eyes, nose, throat, skin and internal organs.

### 3. Composition/information on ingredients

**Chemical characterization:** Mixtures

**Description:** Mixture of substances listed below with nonhazardous additions.

**Dangerous components:**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Identifiers</th>
<th>Percentage</th>
<th>LD50/LC50</th>
<th>Classifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver</td>
<td>CAS: 7440-22-4, EC: 231-131-3</td>
<td>35% to 65%</td>
<td>NDA</td>
<td>EU CLP: Aquatic Chronic 2, H411</td>
</tr>
<tr>
<td>n-Butyl acetate</td>
<td>CAS: 123-86-4, EC: 204-658-1</td>
<td>10% to 30%</td>
<td>Ingestion (oral rat) LD50:</td>
<td>EU CLP: Annex VI, Table 3.1: Flam. Liq. 3,</td>
</tr>
<tr>
<td>Substance</td>
<td>CAS:</td>
<td>Acute oral exposure</td>
<td>Acute dermal exposure</td>
<td>Acute inhalation</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>---------------</td>
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</tr>
<tr>
<td>1-methoxy-2-propanol acetate</td>
<td>108-65-6</td>
<td>0% to 10%</td>
<td>10% to 30%</td>
<td>Oral rat LD50: 8532 mg/kg</td>
</tr>
<tr>
<td>Acrylic resin (Proprietary)</td>
<td>NDA</td>
<td>5% to 10%</td>
<td>NDA</td>
<td>NDA</td>
</tr>
</tbody>
</table>

### 4. First aid measures

**Description of first aid measures**

**After inhalation:**
Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. Obtain medical attention immediately.

**After skin contact:** Immediately wash with water and soap and rinse thoroughly. Remove and isolate contaminated clothing. If irritation develops and persists, obtain medical attention.

**After eye contact:** Rinse opened eye for at least 20 minutes under running water. Then consult a doctor.

**After swallowing:**
Do not induce vomiting; call for medical help immediately.
Drink plenty of water and provide fresh air. Call for a doctor immediately.

**Information for doctor:**
All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

### 5. Firefighting measures

**Extinguishing media**

**Suitable extinguishing agents:**
Dry chemical, CO2, water foam, “alcohol” foam, water spray to cool fire-exposed containers and to disperse vapor. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards arising from the substance or mixture.** Toxic decomposition products may form under fire conditions.

**Advice for firefighters**

**Protective equipment:** Structural firefighters’ protective clothing will only provide limited protection. Wear positive pressure self-contained breathing apparatus (SCBA). Move containers from fire area if you can do it without risk.

### 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
CAUTION: Victim may be a source of contamination. Do not walk through spilled material. Use appropriate Personal Protective Equipment (PPE).

**Environmental precautions:**
Prevent entry into waterways, sewers, basements or confined areas.

**Methods and material for containment and cleaning up:**
Stop leak if you can do it without risk. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use clean non-sparking tools to collect absorbed material. A vapor suppressing foam may be used to reduce vapors. All equipment used when handling the product must be grounded. Waste product may be refined to recover previous metal content.

**Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7. **Handling and storage**

**Handling:**

**Precautions for safe handling**
Use only in well ventilated areas. Keep away from heat, sparks, and flame. Do not use sparking tools. Take precautionary measures against static charges. All equipment used when handling the product must be grounded. Wear appropriate personal protective equipment, and avoid direct contact. Avoid breathing fume, mist, vapors and/or spray. Avoid contact with skin, eyes and clothing. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco. Empty product containers, contaminated clothing and cleaning materials, etc. should be considered hazardous until decontaminated or properly disposed of according to federal, state and local laws and regulations.

**Information about fire and explosion protection:** Keep respiratory protective device available.

**Conditions for safe storage, including any incompatibilities**

**Storage:**

**Requirements to be met by storerooms and receptacles:** Store in a tightly closed container. Store in a cool/low-temperature, well-ventilated place away from heat and ignition sources.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:** No further relevant information available.

**Special end use(s):** This item is not being offered for clinical or diagnostic applications, agricultural uses or for human or animal consumption.

8. **Exposure controls/personal protection**

**Additional information about design of technical facilities:** No further data; see item 7.

**Control parameters**

**Ingredients with limit values that require monitoring at the workplace:**

**123-86-4 n-Butyl acetate**

WEL  Short-term value: 950 mg/m³, 200 ppm
Long-term value: 710 mg/m³, 150 ppm

**7440-22-4 Silver**

WEL  0.01 mg/m³ (dust): 0.1mg/ m³ (dust and fume)
Additional information: The lists valid during the making were used as basis.

Exposure controls:

Personal protective equipment:

General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.

Respiratory protection:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation or other engineering controls to maintain airborne levels below recommended exposure limits.

Protection of hands:
Protective gloves
The glove material has to be impermeable and resistant to the product, the substance, the preparation. Due to missing tests no recommendation to the glove material can be given for the product, the preparation, the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection
Tightly sealed goggles

Additional protection measures: An eyewash station and emergency shower must be available to the work station.

9. Physical and chemical properties

Information on basic physical and chemical properties

General information

Appearance:
- Form: Fluid
- Color: Gray
- Odor: Mild fruity odor
- Odor threshold: Not determined
- pH value: Not determined
10. Stability and reactivity

Reactivity

Chemical stability

Thermal decomposition / conditions to be avoided:
No decomposition if used according to specifications.

Possibility of hazardous reactions: No dangerous reactions known.

Conditions to avoid: Keep away from heat, sparks and flame.

Incompatible materials: Oxidizing agents, acids, potassium tert-butoxide, reducing agents.

Hazardous decomposition products: At high temperature may include oxides of carbon and nitrogen, ethyl methacrylate, methyl acrylate.

11. Toxicological information

Information on toxicological effects

Acute toxicity:
LD/LC50 values relevant for classification:
103-65-6  1-Methoxy-2-propanol acetate
Oral  LD50  8532 mg/kg (rat)
Dermal LD50  >5 g/kg (rabbit)

**Primary irritant effect:**
**on the skin:** Mild skin irritation.
**on the eye:** Moderate eye irritation.

**Sensitization:**
Data lacking

123-86-4  n-Butyl acetate
Oral  LD50  10768 mg/kg (rat)
Dermal LD50  17600 mg/kg (rabbit)

**Primary irritant effect:**
**on the skin:** Mild skin irritation.
**on the eye:** Moderate eye irritation.

**Sensitization:**
Data lacking

**Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Data lacking

12.  **Ecological information**

**Toxicity**

**Silver:**

- **Aquatic toxicity:** 96 Hour(s) LC50 (Fathead Minnow) 0.00213 mg/L
  14 Day(s) NOEC (Japanese Medaka) 0.05 mg/l

Silver nanoparticles cause oxidative damage and histological changes after 14 days of exposure

- **Persistence and degradability:** No further relevant information available
- **Behavior in environmental systems:**
- **Bioaccumulative potential:** No further relevant information available
- **Mobility in soil:** No further relevant information available

- **Ecotoxicological effects:**
  **Remark:** Very toxic for fish

**n-Butyl acetate**

- **Aquatic toxicity:** 96 Hour(s) LC50 (Fathead Minnow) 18 mg/L

- **Persistence and degradability:** No further relevant information available
- **Behavior in environmental systems:**
- **Bioaccumulative potential:** No further relevant information available
  **Mobility in soil:** No further relevant information available

**Results of PBT and vPvB assessment**

**PBT:** Not applicable
vPvB: Not applicable.
Other adverse effects: No further relevant information available.

13. **Disposal considerations**

   **Waste treatment methods**
   
   **Recommendation**
   Dispose of contents and/or container in accordance with local, regional, national and/or international regulations
   
   **Uncleaned packaging:**
   **Recommendation:** Disposal must be made according to official regulations.

14. **Transport information**

   **UN-Number**
   
   ADR, IMDG, IATA UN1263
   
   **UN proper shipping name**
   ADR Paint or Paint related material
   IMDG Paint or Paint related material
   IATA Paint or Paint related material

   **Transport hazard class(es)**
   ADR, IMDG
   Class 3 Flammable liquid
   
   IATA
   Class 3 Flammable liquid

   **Packing group**
   ADR, IMDG, IATA III

   **Environmental hazards:** No further relevant information available
   **Marine pollutant:** No
   **Special marking (ADR):** None

   **Special precautions for user:** None specified

   **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:** No further relevant information available

   **UN “Model Regulation”:** UN1263, Paint, 3, III
15. **Regulatory information**

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16. **Other Information**

This information is based on our present knowledge and should assist the user with the safe handling of this material when properly applied. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Contact
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**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the international Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent