Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
E-Brite 50/50

Product Use
Silver. Plating Additive.

Details of the supplier of the safety data sheet
Electrochemical Products Inc.
17000 West Lincoln Ave
New Berlin, WI 53151
Phone: 262-786-9330
Emergency Phone #: NCEC +86 512 8090 3042, NRCC +86 532 8388 9090
E-mail: international-sales@epi.com
www.epi.com
Fax: 262-786-9403

Electrochemical Products Inc.
17000 West Lincoln Ave
New Berlin, WI 53151
Phone: 262-786-9330
Emergency Phone #: NCEC (#EPI-29003) +1 202 464 2554, +44 1865 407333
E-mail: us-sales@epi.com
www.epi.com
Fax: 262-786-9403

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
Hazardous to the Aquatic Environment - Acute - Category 1
Hazardous to the Aquatic Environment - Chronic - Category 1

GHS Label Elements
Symbol(s)

Signal Word
Warning

Hazard Statement(s)
Very toxic to aquatic life with long lasting effects.

Precautionary Statement(s)
Prevention
Avoid release to the environment.
Response
Collect spillage.

Storage
None needed according to classification criteria.

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.

Statement(s) of Unknown Aquatic Toxicity
0% of the mixture consists of ingredient(s) of unknown acute aquatic toxicity.
0% of the mixture consists of ingredient(s) of unknown chronic aquatic toxicity.

Other Hazards
This product may be harmful or fatal if it is swallowed. Contact with this material will cause burns to the skin, eyes and mucous membranes. May cause argyria, a blue-grey discoloration of the skin, eyes, and mucous membranes.

<table>
<thead>
<tr>
<th>CAS</th>
<th>Component Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>60-90</td>
</tr>
<tr>
<td>7761-88-8</td>
<td>Silver nitrate</td>
<td>2-4</td>
</tr>
</tbody>
</table>

Section 4 - FIRST AID MEASURES

Inhalation
If inhaled, remove to fresh air. Get medical attention. Get medical attention even if symptoms of irritation are mild or quickly subside as lung injury may have occurred.

Skin
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control centre immediately. Wash contaminated clothing before re-use. Destroy or thoroughly clean contaminated shoes.

Eyes
Immediately flush the contaminated eye(s) with water for at least 60 minutes, while holding the eyelid(s) open. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Neutral saline solution may be used as soon as it is available. DO NOT INTERRUPT FLUSHING. Contact a physician or poison control center immediately. Continue flushing the eye(s) until the physician advises to stop. If necessary, continue flushing during transport to an emergency care facility.

Ingestion
If swallowed, DO NOT induce vomiting. Call a physician or poison control centre immediately. Never give anything by mouth to an unconscious person. Notes to physician: Symptoms: The absorption of this product into the body may lead to the formation of methaemoglobin that, in sufficient concentration, causes cyanosis.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media
Suitable Extinguishing Media
Use any extinguishing media appropriate for the surrounding fires. Flush with plenty of water. Do not allow this material to drain into sewers/water supplies.

Unsuitable Extinguishing Media
None identified.
Specific hazards arising from the chemical
None identified.

Hazardous Combustion Products
Decomposition of this product may emit oxides of nitrogen and carbon monoxide.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures
Dike the spilled material, where this is possible. Absorb with inert absorbent such as dry clay, sand or diatomaceous earth, commercial sorbents, or recover using pumps. Block any potential routes to water systems.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling
Wash thoroughly after handling. Avoid getting this material into contact with your skin and eyes.

Conditions for Safe Storage, Including any Incompatibilities
None needed according to classification criteria. Keep the container tightly closed in original container and in a cool, well-ventilated place.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)
There are no biological limit values for any of this product's components.

Appropriate engineering controls
Use general ventilation and use local exhaust, where possible, in confined or enclosed spaces.

Individual Protection Measures, such as Personal Protective Equipment
Eye/face protection
Wear safety glasses with side shields (or chemical goggles).

Skin Protection
Use impervious gloves when handling. Additional protection, including impervious boots, apron, or coveralls, should be worn as needed.

Respiratory Protection
If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn. Respirator type: full-face positive pressure air-supplied. If respirators are used, a program should be instituted to assure compliance with applicable federal, state, commonwealth, provincial, or local laws and regulations.

Glove Recommendations
Use chemical resistant impervious gloves.

Protective Materials
Eye wash fountain and emergency showers are recommended in the workplace. Use good industrial hygiene practices in handling this material.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Colorless Clear Solution</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling Point Range</td>
<td>Not available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>(Approx. equal to Water)</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower Explosive Limit</td>
<td>Not available</td>
</tr>
<tr>
<td>Upper Explosive Limit</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Density (air=1)</td>
<td>(Approx. equal to water)</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Completely</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
</tr>
<tr>
<td>Density</td>
<td>Not available</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>Not available</td>
</tr>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>pH</td>
<td>8 - 9</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>220 °F</td>
</tr>
<tr>
<td>Freezing point</td>
<td>32 °F (0 °C)</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Specific Gravity (water=1)</td>
<td>1.136 - 1.26</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility (Other)</td>
<td>Not available</td>
</tr>
<tr>
<td>VOC</td>
<td>0</td>
</tr>
</tbody>
</table>

**Section 10 - STABILITY AND REACTIVITY**

**Reactivity**  
Will not occur.

**Chemical Stability**  
This is a stable material.

**Possibility of Hazardous Reactions**  
Hazardous polymerisation does not occur.

**Conditions to Avoid**  
None identified.

**Incompatible Materials**  
Avoid Strong reducing agents.

**Hazardous decomposition products**  
Upon decomposition, this product may yield gaseous nitrogen oxides, carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.
Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation
May be harmful if inhaled. May cause damage to lung through prolonged exposure.

Skin Contact
Causes severe burns.

Eye Contact
Causes severe burns.

Ingestion
POISON. May be harmful or fatal if swallowed. May cause burns to the mouth, throat and digestive tract.

Acute and Chronic Toxicity

Component Analysis - LD50/LC50
The components of this material have been reviewed in various sources and the following selected endpoints are published:

Water (7732-18-5)
Oral LD50 Rat >90 mL/kg

Silver nitrate (7761-88-8)
Oral LD50 Rat 1173 mg/kg

Product Toxicity Data

Acute Toxicity Estimate
No data available.

Immediate Effects
No information on significant adverse effects.

Delayed Effects
Inhalation: Harmful if inhaled and may cause delayed lung injury. Eyes: Causes severe burns. Airborne dust extremely irritating. Skin: Causes severe burns. Ingestion: Poison. May be fatal if swallowed. May cause burns of the gastrointestinal tract if swallowed.

Component Carcinogenicity
None of this product’s components are listed by ACGIH, IARC, NTP, DFG or OSHA

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

<table>
<thead>
<tr>
<th>Silver nitrate</th>
<th>7761-88-8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish:</td>
<td></td>
</tr>
<tr>
<td>LC50 96 h Poecilia reticulata 0.00512 - 0.00787 mg/L [semi-static ]; LC50 96 h Lepomis macrochirus 0.009 - 0.02 mg/L [flow-through ]; LC50 96 h Lepomis macrochirus 0.0242 - 0.0484 mg/L [semi-static ]; LC50 96 h Lepomis macrochirus 0.05 - 0.07 mg/L [static ]; LC50 96 h Oncorhynchus mykiss 0.001339 - 0.001637 mg/L [flow-through ]; LC50 96 h Oncorhynchus mykiss 0.0075 mg/L [semi-static ]; LC50 96 h Oncorhynchus mykiss 0.00839 - 0.1802 mg/L [static ]; LC50 96 h Pimephales promelas 0.00452 - 0.00638 mg/L [flow-through ]; LC50 96 h Pimephales promelas 0.00181 - 0.00214 mg/L [static ]; LC50 96 h Pimephales promelas 0.0064 - 0.0106 mg/L [semi-static ]; LC50 96 h Pimephales promelas 0.009 mg/L; LC50 96 h Cyprinus carpio 0.0027 mg/L [semi-static ]</td>
<td></td>
</tr>
</tbody>
</table>
Invertebrate: EC50 48 h Daphnia magna 0.0006 mg/L IUCLID; EC50 48 h Daphnia magna 0.0008 - 0.001 mg/L [Flow through] EPA; EC50 48 h Daphnia magna 0.0008 - 0.0011 mg/L [Static] EPA

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods
Waste must be handled in accordance with all federal, state, provincial, and local regulations. Transport waste material to an authorized waste location, or incinerate under controlled conditions.

Component Waste Numbers
The U.S. EPA has not published waste numbers for this product's components

Section 14 - TRANSPORT INFORMATION

US DOT Information:
Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (Contains: Silver Nitrate Solution)
Hazard Class: 9
UN/NA #: 3082
Packing Group: III
Required Label(s): Environmental

IATA Information:
Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (Contains: Silver nitrate, solution.)
Hazard Class: Environmental
UN#: 3082
Packing Group: III
Required Label(s): 9

IMDG Information:
Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (Contains: Silver nitrate, solution.)
Hazard Class: Environmental
UN#: 3082
Packing Group: III
Required Label(s): 9

TDG Information:
Shipping Name: Environmentally Hazardous Substances Liquid N.O.S., (Contains: Silver Nitrate Solution)
Hazard Class: 9
UN#: 3082
Packing Group: III
Required Label(s): Environmental

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations
This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS Number</th>
<th>CERCLA</th>
<th>RQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver nitrate</td>
<td>7761-88-8</td>
<td>1 lb final RQ ; 0.454 kg final RQ</td>
<td></td>
</tr>
</tbody>
</table>

Not listed under California Proposition 65

Component Analysis - Inventory

Water (7732-18-5)

<table>
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<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Silver nitrate (7761-88-8)

<table>
<thead>
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<tbody>
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<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Section 16 - OTHER INFORMATION

Other Information

Disclaimer:
Reasonable care has been taken in the preparation of this information; however, the manufacturer makes no warranty whatsoever including the warranty of merchantability, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental, consequential, or other such damages resulting from its use or misuse.