Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
B/OX 311 Gel

Product Use
Antiquing Solution.

Manufacturer Information
Electrochemical Products Inc.
17000 West Lincoln Ave
New Berlin, WI 53151
Phone: 262-786-9330
Emergency Phone #: Chemtrec #800-424-9300 (CCN7498)
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.
Skin Corrosion/Irritation - Category 1
Serious Eye Damage/Eye Irritation - Category 1
Hazardous to the Aquatic Environment - Acute - Category 1
Hazardous to the Aquatic Environment - Chronic - Category 1

GHS Label Elements
Symbol(s)

Signal Word
Danger

Hazard Statement(s)
Causes severe skin burns and eye damage
Very toxic to aquatic life with long lasting effects
Precautionary Statement(s)

Prevention
Wear protective gloves/protective clothing/eye protection/face protection
Wash thoroughly after handling
Avoid release to the environment
Do not breathe dusts or mists

Response
Collect spillage
IF INHALED: Remove person to fresh air and keep comfortable for breathing
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
Immediately call a POISON CENTER or doctor
Specific treatment (see label)

Storage
Store locked up

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

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

<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>85-90</td>
</tr>
<tr>
<td>7664-38-2</td>
<td>Phosphoric acid</td>
<td>3-7</td>
</tr>
<tr>
<td>7783-00-8</td>
<td>Selenous acid</td>
<td>1-4</td>
</tr>
<tr>
<td>7758-98-7</td>
<td>Cupric sulfate</td>
<td>1.5-3</td>
</tr>
<tr>
<td>27546-07-2</td>
<td>Molybdate (Mo2O72-), diammonium</td>
<td>1-2</td>
</tr>
</tbody>
</table>

Section 4 - FIRST AID MEASURES

Inhalation
If inhaled, immediately remove the affected person to fresh air. Give artificial respiration if not breathing. Seek medical attention.

**Skin**
Immediatly flush skin with lots of running water for 30 minutes. Remove contaminated clothing and shoes. Wash before reuse. Get immediate medical attention.

**Eyes**
In case of contact, immediately flush eyes with large amounts of water, continuing to flush for 30 minutes. Get medical attention or advice.

**Ingestion**
Give several glasses of water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to a victim who is unconscious or is having convulsions. Call a physician immediately.

**Indication of any immediate medical attention and special treatment needed**
Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath headache, nausea, and vomiting. It causes conjunctivitis leading eventually to an allergic type of reaction of the eyes. Acute selenium poisoning produces central nervous system effects, which include nervousness, convulsions, and drowsiness. Other signs of gastrointestinal distress, teeth that are discolored or decayed, odorous (garlic-like) breath, and partial loss of hair and nails. Chronic exposure by inhalation can produce symptoms that include pallor, coating of the tongue, anemia, irritation of the mucosa, lumbar pain, liver and spleen damage, as well as any of the other previously mentioned symptoms.

**Antidote**
Not Applicable.

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**Section 5 - FIRE FIGHTING MEASURES**

**Extinguishing Media**

**Suitable Extinguishing Media**
Dry chemical, foam, carbon dioxide, water fog.

**Unsuitable Extinguishing Media**
None known.

**Hazardous Combustion Products**
May produce toxic selenous fumes.

**Fire Fighting Measures**
Firefighters should wear full-face, self-contained breathing apparatus and impervious protective clothing. Firefighters should avoid inhaling any combustion products.
Personal Precautions, Protective Equipment and Emergency Procedures
Avoid contact with skin and eyes. Wear appropriate personal protective equipment.

Methods and Materials for Containment and Cleaning Up
Isolate area. Keep unnecessary personnel away.

Environmental Precautions
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.

Conditions for Safe Storage, Including any Incompatibilities
Store locked up
Keep the container tightly closed and in a cool, well-ventilated place.

Incompatible Materials
None known.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH:</th>
<th>NIOSH:</th>
<th>Europe:</th>
<th>OSHA (US):</th>
<th>Mexico:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid</td>
<td>1 mg/m3 TWA</td>
<td>1 mg/m3TWA</td>
<td>1 mg/m3 TWA</td>
<td>1 mg/m3TWA</td>
<td>1 mg/m3TWA LMPE-PPT</td>
</tr>
<tr>
<td></td>
<td>3 mg/m3 STEL</td>
<td>3 mg/m3STEL</td>
<td>2 mg/m3 STEL</td>
<td>1 mg/m3TWA</td>
<td>3 mg/m3STEL [LMPE-CT]</td>
</tr>
</tbody>
</table>
Material Name: B/OX 311 Gel

<table>
<thead>
<tr>
<th>Molybdate (Mo2O72-), diammonium</th>
<th>27546-07-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH:</td>
<td>0.5 mg/m3 TWA as Morespirable fraction (related to Molybdenum soluble compounds)</td>
</tr>
<tr>
<td>NIOSH:</td>
<td>1000 mg/m3IDLH as Mo (related to Molybdenum soluble compounds)</td>
</tr>
<tr>
<td>OSHA (US):</td>
<td>5 mg/m3TWA as Mo (related to Molybdenum soluble compounds)</td>
</tr>
<tr>
<td>Mexico:</td>
<td>5 mg/m3TWA LMPE-PPT as Mo (related to Molybdenum soluble compounds)</td>
</tr>
<tr>
<td></td>
<td>10 mg/m3STEL [LMPE-CT] as Mo (related to Molybdenum soluble compounds)</td>
</tr>
</tbody>
</table>

**Biological limit value**
There are no biological limit values for any of this product's components.

**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.

**Skin Protection**
Use impervious gloves. Use of protective coveralls and long sleeves is recommended.

**Respiratory Protection**
If ventilation is not sufficient to effectively prevent buildup of vapor/mist/fume/dust, appropriate NIOSH/MSHA respiratory protection must be provided.

**Glove Recommendations**
Use of impervious gloves is recommended.

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

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**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Yellow Gel</th>
<th>Physical State</th>
<th>Not available</th>
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</thead>
<tbody>
<tr>
<td>Odor</td>
<td>Characteristic</td>
<td>Color</td>
<td>Not available</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
<td>pH</td>
<td>1 - 2</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not available</td>
<td>Boiling Point</td>
<td>220 °F (105 °C)</td>
</tr>
</tbody>
</table>
### Section 10 - STABILITY AND REACTIVITY

**Reactivity**
Will not occur.

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

**Possibility of Hazardous Reactions**
Will not occur.

**Conditions to Avoid**
Avoid contact with extreme heat.

**Incompatible Materials**
This product may react with strong acids. This product may react with strong reducing agents. Organic compounds and cyanides.

**Hazardous decomposition products**
May produce volatile organoselenides or hydrogen selenide.
Section 11 - TOXICOLOGICAL INFORMATION

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 LD50Rat >90 mL/kg
Phosphoric acid (7664-38-2)
Oral LD50Rat 1530 mg/kg
Dermal LD50Rabbit 2740 mg/kg
Inhalation LC50Rat >850 mg/m3 1 h
Cupric sulfate (7758-98-7)
Oral LD50Rat 300 mg/kg
Dermal LD50Rabbit 1000 mg/kg

Immediate Effects
No information on significant adverse effects.

Delayed Effects
No information on significant adverse effects.

Irritation/Corrosivity Data
No data available.

Respiratory Sensitization
No data available.

Dermal Sensitization
No data available.

Component Carcinogenicity

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molybdate (Mo2O72-), diammonium</td>
<td>A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans (related to Molybdenum soluble compounds)</td>
</tr>
<tr>
<td></td>
<td>27546-07-2</td>
</tr>
</tbody>
</table>

Germ Cell Mutagenicity
No data available.

Reproductive Toxicity
No data available.

Specific Target Organ Toxicity - Single Exposure
No data available.

Specific Target Organ Toxicity - Repeated Exposure
No data available.
Safety Data Sheet

Material Name: B/OX 311 Gel

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>Minimum Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cupric sulfate</td>
<td>7758-98-7</td>
<td>DOT regulated severe marine pollutant (anhydrous, hydrates)</td>
</tr>
<tr>
<td>Fish:</td>
<td>LC50 96 h Oncorhynchus mykiss 0.1 mg/L</td>
<td></td>
</tr>
<tr>
<td>Invertebrate:</td>
<td>EC50 48 h Daphnia magna 0.0058 - 0.0073 mg/L [static] EPA</td>
<td></td>
</tr>
</tbody>
</table>

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. Do not allow this material to drain into sewers/water supplies.

Section 14 - TRANSPORT INFORMATION

Component Marine Pollutants
This material contains one or more of the following chemicals required by US DOT to be identified as marine pollutants

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>Minimum Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cupric sulfate</td>
<td>7758-98-7</td>
<td>DOT regulated severe marine pollutant (anhydrous, hydrates)</td>
</tr>
</tbody>
</table>

US DOT Information:

Shipping Name: Corrosive Liquid N.O.S., (Contains: Phosphoric Acid, Selenous Acid)
Hazard Class: 8
UN/NA #: UN1760
Packing Group: II
Required Label(s): Corrosive

TDG Information:
Shipping Name: Corrosive Liquid NOS, (Contains: Phosphoric Acid, Selenous Acid)
Hazard Class: 8
UN#: UN1760
Packing Group: II
Required Label(s): Corrosive

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>Component</th>
<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
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<tbody>
<tr>
<td>Phosphoric acid</td>
<td>7664-38-2</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Selenous acid</td>
<td>7783-00-8</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>SARA 302: 1000 lb lower TPQ; 10000 lb upper TPQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SARA 304: 10 lb EPCRA RQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cupric sulfate</td>
<td>7758-98-7</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>CERCLA: 10 lbfinal RQ; 4.54 kgfinal RQ</td>
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<td></td>
</tr>
<tr>
<td>Molybdate (Mo2O72-), diammonium</td>
<td>27546-07-2</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

SARA Section 311/312 (40 CFR 370 Subparts B and C)
Acute Health: no Chronic Health: no Fire: no Pressure: no Reactivity: no

U.S. State Regulations
The following components appear on one or more of the following state hazardous substances lists:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
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<td>Selenous acid</td>
<td>7783-00-8</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Cupric sulfate</td>
<td>7758-98-7</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Molybdate (Mo2O72-), diammonium</td>
<td>27546-07-2</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Not listed under California Proposition 65

Canadian WHMIS Ingredient Disclosure List (IDL)
Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL.

<table>
<thead>
<tr>
<th>Component Name</th>
<th>ID Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid</td>
<td>7664-38-2</td>
<td>1 %</td>
</tr>
<tr>
<td>Selenous acid</td>
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</tr>
<tr>
<td>Cupric sulfate</td>
<td>7758-98-7</td>
<td>1 %</td>
</tr>
<tr>
<td>Molybdate (Mo2O72-), diammonium</td>
<td>27546-07-2</td>
<td>1 % (related to Molybdenum compounds)</td>
</tr>
</tbody>
</table>

### Component Analysis - Inventory

#### Water (7732-18-5)

<table>
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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>Yes</td>
<td>Yes</td>
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</table>

#### Phosphoric acid (7664-38-2)

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<td>Yes</td>
<td>No</td>
<td>Yes</td>
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#### Selenous acid (7783-00-8)

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

#### Cupric sulfate (7758-98-7)

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<tr>
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<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
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</table>
Molybdate (Mo2O72-), diammonium (27546-07-2)

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

Section 16 - OTHER INFORMATION

HMIS Rating

Health: 2 Fire: 0 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

Key / Legend
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR’s Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH - Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.