Material Safety Data Sheet

Material Name: B/OX 313 **ID: EPI-0045**

* * * Section 1 - Chemical Product and Company Identification * * *

Product Use: Antiquing Solution

Manufacturer Information

Electrochemical Products Inc.
17000 West Lincoln Ave
New Berlin, WI 53151
Mfg Contact: www.epi.com

Phone: 262-786-9330
Fax: 262-786-9403
Emergency # Chemtrec #800-424-9300

* * * Section 2 - Hazards Identification * * *

Emergency Overview

CAUTION This product may cause irritation to the eyes. This product may cause irritation to the skin. Ingestion will result in metallic taste, garlic odor to breath, nausea.

Potential Health Effects: Eyes

It is an eye irritant, causing redness and watering.

Potential Health Effects: Skin

It is not a primary skin irritant. However, it can produce redness of skin and slight edema on prolonged contact.

Potential Health Effects: Ingestion

Ingestion will result in metallic taste, garlic odor to breath, nausea.

Potential Health Effects: Inhalation

Breathing mists can cause nose and throat irritation. Garlic odor to breath, headaches, dizziness, difficulty breathing.

HMIS Ratings: Health: 2 **Fire:** 0 **Physical Hazard:** 0 **Pers. Prot.:** C (Gloves, Safety Glasses, Apron)

* * * Section 3 - Composition / Information on Ingredients * * *

CAS #	Component	Percent
7732-18-5	Water	88-92
7758-98-7	Cupric sulfate	3-6
7783-00-8	Selenous acid	1-3
7647-01-0	Hydrogen chloride	0.5-0.99

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Selenium compounds, Selenium inorganic compounds.

Component Information/Information on Non-Hazardous Components

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication). This is a controlled product under the Canadian WHMIS regulations.

* * * Section 4 - First Aid Measures * * *

First Aid: Eyes

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

First Aid: Skin

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

First Aid: 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.

First Aid: Inhalation

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

* * * Section 5 - Fire Fighting Measures * * *

Hazardous Combustion Products

May produce toxic selenous fumes.

Extinguishing Media

Dry chemical, foam, carbon dioxide, water fog.

Fire Fighting Equipment/Instructions

Firefighters should wear full-face, self contained breathing apparatus and impervious protective clothing. Firefighters should avoid inhaling any combustion products.

* * * Section 6 - Accidental Release Measures * * *

Containment Procedures

Wear appropriate protective equipment and clothing during clean-up. Stop source of leak if possible. Absorb with inert absorbent such as dry clay, sand or diatomaceous earth, commercial sorbents, or recover using pumps. Scoop up used absorbent into drums or other appropriate container. Block any potential routes to water systems.

Clean-Up Procedures

Dispose of spent absorbent in an approved industrial waste landfill.

Evacuation Procedures

Isolate area. Keep unnecessary personnel away.

Special Procedures

No additional information available.

* * * Section 7 - Handling and Storage * * *

Handling Procedures

Wash thoroughly after handling. Keep container closed.

Storage Procedures

Keep the container tightly closed and in a cool, well-ventilated place.

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

A: Component Exposure Limits

Selenous acid (7783-00-8)

ACGIH: 0.2 mg/m3 TWA (Se) (related to Selenium compounds)
OSHA: 0.2 mg/m3 TWA (Se) (related to Selenium compounds)
NIOSH: 0.2 mg/m3 TWA (except Selenium hexafluoride, Se) (related to Selenium compounds)

Hydrogen chloride (7647-01-0)

ACGIH: 2 ppm Ceiling
OSHA: 5 ppm Ceiling; 7 mg/m3 Ceiling
NIOSH: 5 ppm Ceiling; 7 mg/m3 Ceiling

Engineering Controls

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

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Wear safety glasses with side shields.

Personal Protective Equipment: Skin

Use impervious gloves. Use of protective coveralls and long sleeves is recommended. Use of an impervious apron is recommended.

Personal Protective Equipment: Respiratory

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

Personal Protective Equipment: General

Eye wash fountain and emergency showers are recommended.

* * * Section 9 - Physical & Chemical Properties * * *

Appearance:	Light Blue Solution	**Odor:**	Characteristic
Physical State:	Liquid	**pH:**	0-2
Vapor Pressure:	Not Available	**Vapor Density:**	Approx. equal to water
Boiling Point:	220°F (105°C)	**Melting Point:**	None
Solubility (H2O):	Completely	**Specific Gravity:**	1.03-1.07
Freezing Point:	32°F	**Evaporation Rate:**	Approx. equal to Water
VOC:	0	**Octanol/H2O Coeff.:**	None
Flash Point:	None	**Flash Point Method:**	None
Upper Flammability Limit (UFL):	None	**Lower Flammability Limit (LFL):**	None
Burning Rate:	None	**Auto Ignition:**	None

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability

This is a stable material.

Chemical Stability: Conditions to Avoid

Avoid contact with extreme heat.

Incompatibility

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

Hazardous Decomposition

May produce volatile organoselenides or hydrogen selenide.

Possibility of Hazardous Reactions

Will not occur.

* * * Section 11 - Toxicological Information * * *

Acute Dose Effects

A: General Product Information

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.

B: Component Analysis - LD50/LC50

Water (7732-18-5)

Oral LD50 Rat >90 mL/kg

Cupric sulfate (7758-98-7)

Oral LD50 Rat 300 mg/kg; Dermal LD50 Rabbit 1000 mg/kg

Hydrogen chloride (7647-01-0)

Inhalation LC50 Rat 3124 ppm 1 h; Oral LD50 Rat 700 mg/kg; Dermal LD50 Rabbit >5010 mg/kg

Carcinogenicity

A: General Product Information

None identified.

B: Component Carcinogenicity

Selenous acid (7783-00-8)

IARC: Supplement 7 [1987]; Monograph 9 [1975] (related to Selenium compounds) (Group 3 (not classifiable))

Hydrogen chloride (7647-01-0)

ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Monograph 54 [1992] (Group 3 (not classifiable))

* * * Section 12 - Ecological Information * * *

Ecotoxicity

Component Analysis - Ecotoxicity - Aquatic Toxicity

Cupric sulfate (7758-98-7)

Test & Species		Conditions
96 Hr LC50 Oncorhynchus mykiss	0.1 mg/L	
48 Hr EC50 Daphnia magna	0.0058 - 0.0073 mg/L [Static]	

Hydrogen chloride (7647-01-0)

Test & Species		Conditions
96 Hr LC50 Gambusia affinis	282 mg/L [static]	

* * * Section 13 - Disposal Considerations * * *

US EPA Waste Number & Descriptions

A: General Product Information

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.

B: Component Waste Numbers

Selenous acid (7783-00-8)

RCRA: waste number U204

Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations. Do not allow this material to drain into sewers/water supplies.
See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

* * * Section 14 - Transportation Information * * *

US DOT Information

Shipping Name: Corrosive Liquid N.O.S. (Hydrochloric Acid, Selenous Acid)
UN/NA #: UN1760 **Hazard Class:** 8 **Packing Group:** II
Required Label(s): Corrosive
Additional Info.: Not a Marine Pollutant.

TDG Information

Shipping Name: Not a Dangerous Good under TDG.

* * * Section 15 - Regulatory Information * * *

US Federal Regulations

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List. Supplier(s) of proprietary component(s) have stated that their components appear on the Canadian DSL/NDSL.

B: Component Analysis

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) and/or CERCLA (40 CFR 302.4).

Cupric sulfate (7758-98-7)

CERCLA: 10 lb final RQ; 4.54 kg final RQ

Selenous acid (7783-00-8)
SARA 302: 1000 lb lower TPQ; 10000 lb upper TPQ
SARA 313: 1.0 % de minimis concentration (Chemical Category N725) (related to Selenium compounds)
CERCLA: 10 lb final RQ; 4.54 kg final RQ

Hydrogen chloride (7647-01-0)
SARA 302: 500 lb TPQ (gas only)
CERCLA: 5000 lb final RQ; 2270 kg final RQ

C: Component Marine Pollutants

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

Component	CAS #	
Cupric sulfate	7758-98-7	DOT regulated severe marine pollutant (anhydrous, hydrates)

Acute Health: no **Chronic Health:** no **Fire:** no **Pressure:** no **Reactive:** no

State Regulations

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Cupric sulfate	7758-98-7	Yes	Yes	No	Yes	Yes	No
Selenous acid ([1]related to Selenium compounds)	7783-00-8	Yes [1]	Yes	Yes [1]	Yes	Yes	Yes [1]
Hydrogen chloride	7647-01-0	Yes	Yes	Yes	Yes	Yes	Yes

Canadian WHMIS Information

A: General Product Information

This is a controlled product under the Canadian WHMIS regulations.

B: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Cupric sulfate	7758-98-7	1 %
Selenous acid	7783-00-8	1 %

Additional Regulatory Information

A: General Product Information

No information available.

B: Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Water	7732-18-5	Yes	DSL	EINECS
Cupric sulfate	7758-98-7	Yes	DSL	EINECS
Selenous acid	7783-00-8	Yes	DSL	EINECS
Hydrogen chloride	7647-01-0	Yes	DSL	EINECS

* * * Section 16 - Other Information * * *

Other Information

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. Disclaimer: Supplier gives no warranty of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser will make his own tests to determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental and/or consequential property damage arising out of the use of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights. Read the Material Safety Data Sheet before handling product. The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

MSDS History

MSDS has been reformatted in accordance with ANSI Z400.1-2004.

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; DOT = Department of Transportation; DSL = Domestic Substances List; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IATA = International Air Transport Association; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NOHSC = National Occupational Health & Safety Commission; NTP = National Toxicology Program; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

End of Sheet EPI-0045