



Safety Data Sheet

Material Name: B/OX 313

SDS ID: EPI-0045c

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

B/OX 313

Product Use

Antiquing Solution.

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 (#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.

Skin Corrosion/Irritation - Category 2

Serious Eye Damage/Eye Irritation - Category 2A

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 skin irritation.

Causes serious eye irritation.

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.

Response

Collect spillage.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

If eye irritation persists: Get medical advice/attention.



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IF ON SKIN: Wash with plenty of soap and water.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.
Specific treatment (see label).

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.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
7732-18-5	Water	88-92
7758-98-7	Cupric sulfate	3-6
7783-00-8	Selenious acid	1-3
7647-01-0	Hydrogen chloride	0.5-0.99
7697-37-2	Nitric acid	0.5-0.99

Section 4 - FIRST AID MEASURES

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Give artificial respiration if not breathing. Seek medical attention.

Skin

Immediately 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 immediate medical attention.

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

Ingestion will result in metallic taste, garlic odor to breath, nausea. Breathing mists can cause nose and throat irritation. Garlic odor to breath, headaches, dizziness, difficulty breathing.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media



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Dry chemical, foam, carbon dioxide, water fog.

Unsuitable Extinguishing Media

None known.

Specific hazards arising from the chemical

None known.

Hazardous Combustion Products

May produce toxic selenous fumes.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear appropriate protective equipment and clothing during clean-up. Avoid contact with skin and eyes.

Methods and Materials for Containment and Cleaning Up

Isolate area. Keep unnecessary personnel away.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Wash thoroughly after handling. Keep container tightly closed.

Conditions for Safe Storage, Including any Incompatibilities

None needed according to classification criteria.

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

Hydrogen chloride	7647-01-0
ACGIH:	2 ppm Ceiling
NIOSH:	5 ppm Ceiling ; 7 mg/m ³ Ceiling
	50 ppm IDLH
Europe:	5 ppm TWA ; 8 mg/m ³ TWA
	10 ppm STEL ; 15 mg/m ³ STEL
OSHA (US):	5 ppm Ceiling ; 7 mg/m ³ Ceiling
Mexico:	5 ppm Ceiling ; 7 mg/m ³ Ceiling
Nitric acid	7697-37-2
ACGIH:	2 ppm TWA
	4 ppm STEL



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NIOSH:	2 ppm TWA ; 5 mg/m3 TWA
	4 ppm STEL ; 10 mg/m3 STEL
	25 ppm IDLH
Europe:	1 ppm STEL ; 2.6 mg/m3 STEL
OSHA (US):	2 ppm TWA ; 5 mg/m3 TWA
Mexico:	2 ppm TWA VLE-PPT ; 5 mg/m3 TWA VLE-PPT
	4 ppm STEL [PPT-CT] ; 10 mg/m3 STEL [PPT-CT]

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 of an impervious apron is recommended. 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.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Light Blue Solution	Physical State	Liquid
Odor	Characteristic	Color	light blue.
Odor Threshold	Not available	pH	0 - 2
Melting Point	Not available	Boiling Point	220 F at 105 C
Boiling Point Range	Not available	Freezing point	32 °F (0 °C)
Evaporation Rate	(Approx. equal to Water)	Flammability (solid, gas)	Not available
Autoignition Temperature	Not available	Flash Point	Not available



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Lower Explosive Limit	Not available	Decomposition temperature	Not available
Upper Explosive Limit	Not available	Vapor Pressure	Not available
Vapor Density (air=1)	(Approx. equal to water)	Specific Gravity (water=1)	1.03 - 1.07
Water Solubility	Completely	Partition coefficient: n-octanol/water	Not available
Viscosity	Not available	Solubility (Other)	Not available
Density	Not available	VOC	0
Molecular Weight	Not available		

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

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.

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

Cupric sulfate (7758-98-7)

Oral LD50 Rat 300 mg/kg



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Dermal LD50 Rabbit 1000 mg/kg

Hydrogen chloride (7647-01-0)

Oral LD50 Rat 238 - 277 mg/kg

Dermal LD50 Rabbit >5010 mg/kg

Inhalation LC50 Rat 1.68 mg/L 1 h

Nitric acid (7697-37-2)

Inhalation LC50 Rat 67 ppm 4 h

Product Toxicity Data

Acute Toxicity Estimate

No data available.

Immediate Effects

No information on significant adverse effects.

Delayed Effects

No information on significant adverse effects.

Component Carcinogenicity

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

Component Analysis - Aquatic Toxicity

Cupric sulfate	7758-98-7
Fish:	LC50 96 h Oncorhynchus mykiss 0.1 mg/L
Invertebrate:	EC50 48 h Daphnia magna 0.0058 - 0.0073 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. Do not allow this material to drain into sewers/water supplies. Dispose of waste material in accordance with all applicable Federal, State or provincial and local environmental regulations. See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Component Waste Numbers

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

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



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

US DOT Information:

Shipping Name: CORROSIVE LIQUIDS, N.O.S., (Contains: Hydrochloric Acid, Selenous Acid)

Hazard Class: 8

UN/NA #: UN1760

Packing Group: II

Required Label(s): Corrosive

TDG Information:

Shipping Name: Corrosive Liquid N.O.S., (Contains: Hydrochloric 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.

Cupric sulfate	7758-98-7
CERCLA:	10 lb final RQ ; 4.54 kg final RQ
Selenious acid	7783-00-8
SARA 302:	1000 lb lower TPQ ; 10000 lb upper TPQ
CERCLA:	10 lb final RQ ; 4.54 kg final RQ
SARA 304:	10 lb EPCRA RQ
Hydrogen chloride	7647-01-0
SARA 302:	500 lb TPQ gas only)
SARA 313:	1 % de minimis concentration (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)
CERCLA:	5000 lb final RQ ; 2270 kg final RQ
OSHA (safety):	5000 lb TQ ; 5000 lb TQ (anhydrous)



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SARA 304:	5000 lb EPCRA RQ gas only)
Nitric acid	7697-37-2
SARA 302:	1000 lb TPQ
SARA 313:	1 % de minimis concentration
CERCLA:	1000 lb final RQ ; 454 kg final RQ
OSHA (safety):	500 lb TQ (>=94.5% by weight)
SARA 304:	1000 lb EPCRA RQ

Not listed under California Proposition 65

Component Analysis - Inventory
Water (7732-18-5)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	No	Yes	Yes	Yes	Yes

Cupric sulfate (7758-98-7)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes

Selenious acid (7783-00-8)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes

Hydrogen chloride (7647-01-0)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes

Nitric acid (7697-37-2)



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US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes

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..