

SAFETY DATA SHEET



Revision date 19-Dec-2022

Revision Number 1

1. Identification

Product identifier

Product Name B/OX 316 Gel

Other means of identification

Product Code(s) EPI-0270C

UN number or ID number UN1760

Synonyms None

Details of the supplier of the safety data sheet

Manufacturer Address

Electrochemical Products Inc.
17000 West Lincoln Ave
New Berlin, WI 53151
Phone: 262-786-9330
E-mail: us-sales@epi.com
www.epi.com
Fax: 262-786-9403

Emergency telephone number

Emergency Telephone NCEC (#EPI-29003) +1 202 464 2554, +44 1865 407333

2. Hazard(s) identification

Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Danger

Hazard statements

Harmful if swallowed
Harmful if inhaled
Causes severe skin burns and eye damage

**Appearance** Blue Solution**Physical state** Liquid**Odor** Ammonia**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Use only outdoors or in a well-ventilated area
 Do not breathe dusts or mists
 Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

IF exposed or concerned:
 Immediately call a POISON CENTER or doctor/physician
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 Immediately call a POISON CENTER or doctor
 If eye irritation persists: Get medical advice/attention
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
 Wash contaminated clothing before reuse
 If skin irritation or rash occurs: Get medical advice/attention
 IF INHALED: Remove person to fresh air and keep comfortable for breathing
 Immediately call a POISON CENTER or doctor
 Call a POISON CENTER or doctor if you feel unwell
 IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
 Rinse mouth
 Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other information

Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

3. Composition/information on ingredients**Substance**

Not applicable.

Mixture

Chemical name	CAS No	Weight-%	Trade secret
Water	7732-18-5	40-60	*
Ammonium chloride	12125-02-9	15-25	*
Ammonium hydroxide	1336-21-6	15-30	*
Molybdenum compound	Trade secret	5-10	*
Copper Sulfate	7758-98-7	3-8	*
Thickener	Trade secret	3.8	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

General advice	IF exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get medical attention immediately if symptoms occur.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid breathing vapors or mists. Use personal protective equipment as required. See section 8 for more information.

Most important symptoms and effects, both acute and delayed

Symptoms	Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.
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5. Fire-fighting measures

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.
Specific hazards arising from the chemical	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.
Explosion data	
Sensitivity to mechanical impact	None.
Sensitivity to static discharge	None.
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid breathing vapors or mists.
Other information	Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.

7. Handling and storage

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Avoid breathing vapors or mists.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Protect from moisture. Store locked up. Store away from other materials.
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8. Exposure controls/personal protection

Control parameters

Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Ammonium chloride 12125-02-9	STEL: 20 mg/m ³ fume TWA: 10 mg/m ³ fume	(vacated) TWA: 10 mg/m ³ fume (vacated) STEL: 20 mg/m ³ fume	TWA: 10 mg/m ³ fume STEL: 20 mg/m ³ fume
Ammonium hydroxide 1336-21-6	STEL: 35 ppm TWA: 25 ppm	TWA: 50 ppm TWA: 35 mg/m ³ (vacated) STEL: 35 ppm (vacated) STEL: 27 mg/m ³	IDLH: 300 ppm TWA: 25 ppm TWA: 18 mg/m ³ STEL: 35 ppm STEL: 27 mg/m ³
Molybdenum compound	TWA: 0.5 mg/m ³ Mo respirable particulate matter	TWA: 5 mg/m ³ Mo (vacated) TWA: 5 mg/m ³ Mo	IDLH: 1000 mg/m ³ Mo
Copper Sulfate 7758-98-7	TWA: 1 mg/m ³ Cu dust and mist	-	IDLH: 100 mg/m ³ Cu dust and mist TWA: 1 mg/m ³ Cu dust and mist

Biological occupational exposure limits

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Hand protection Wear suitable gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

9. Physical and chemical properties**Information on basic physical and chemical properties**

Physical state Liquid
Appearance Blue Solution
Color dark blue
Odor Ammonia

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	None known
Melting point / freezing point	No data available	None known
Boiling point / boiling range	102 °C / 215.6 °F	None known
Flash point	No data available	None known
Relative density	1 - 1.2	None known
Water solubility	Completely	None known

Other information

VOC Content (%) No information available

10. Stability and reactivity

Reactivity No information available.

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions None under normal processing.

Conditions to avoid Exposure to air or moisture over prolonged periods. Excessive heat.

Incompatible materials Acids. Bases. Oxidizing agent.

Hazardous decomposition products None known based on information supplied.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. Harmful by inhalation.
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components). Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage to eyes.
Skin contact	Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns.
Ingestion	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing.

Acute toxicity

Numerical measures of toxicity

No information available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	1,627.70 mg/kg
ATEmix (dermal)	6,302.10 mg/kg
ATEmix (inhalation-dust/mist)	2.415 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Ammonium chloride 12125-02-9	= 1650 mg/kg (Rat)	> 2000 mg/kg (Rat)	-
Ammonium hydroxide 1336-21-6	= 350 mg/kg (Rat)	-	-
Molybdenum compound	-	> 2000 mg/kg (Rat)	> 5.84 mg/L (Rat) 4 h
Copper Sulfate 7758-98-7	= 300 mg/kg (Rat)	> 2000 mg/kg (Rat)	-
Thickener	= 20 g/kg (Rat)	= 20800 mg/kg (Rabbit)	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes burns.

Serious eye damage/eye irritation Classification based on data available for ingredients. Risk of serious damage to eyes. Causes burns.

Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Target organ effects	Liver, Kidney, Respiratory system, Eyes, Skin, Blood.
Aspiration hazard	No information available.
Other adverse effects	No information available.
Interactive effects	No information available.

12. Ecological information

Ecotoxicity Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Ammonium chloride 12125-02-9	-	LC50: =209mg/L (96h, Cyprinus carpio)	-	-
Ammonium hydroxide 1336-21-6	-	LC50: 0.26 - 4.6mg/L (96h, Lepomis macrochirus) LC50: 0.73 - 2.35mg/L (96h, Pimephales promelas) LC50: =0.44mg/L (96h, Cyprinus carpio) LC50: =1.17mg/L (96h, Lepomis macrochirus) LC50: =1.19mg/L (96h, Poecilia reticulata) LC50: =5.9mg/L (96h, Pimephales promelas) LC50: =8.2mg/L (96h, Pimephales promelas) LC50: >1.5mg/L (96h, Poecilia reticulata)	-	EC50: =0.66mg/L (48h, Daphnia pulex) EC50: =0.66mg/L (48h, water flea) LC50: =25.4mg/L (48h, Daphnia magna)
Molybdenum compound	-	LC50: =420mg/L (96h, Oncorhynchus mykiss)	-	-
Copper Sulfate 7758-98-7	-	LC50: =0.1mg/L (96h, Oncorhynchus mykiss)	-	EC50: 0.0058 - 0.0073mg/L (48h, Daphnia magna)
Thickener	EC50: =19000mg/L (96h,	LC50: 41 - 47mL/L (96h,	-	EC50: >1000mg/L (48h,

	Pseudokirchneriella subcapitata)	Oncorhynchus mykiss) LC50: =51400mg/L (96h, Pimephales promelas) LC50: =51600mg/L (96h, Oncorhynchus mykiss) LC50: =710mg/L (96h, Pimephales promelas)		Daphnia magna)
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Persistence and degradability No information available.

Bioaccumulation There is no data for this product.

Chemical name	Partition coefficient
Thickener	-1.07

Other adverse effects No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

14. Transport information

DOT

UN number or ID number UN1760
Proper shipping name Corrosive liquids, n.o.s.
Transport hazard class(es) 8
Packing group II
Reportable Quantity (RQ) (Copper Sulfate: RQ (kg)= 4.54, Ammonium chloride: RQ (kg)= 2270.00, Ammonium hydroxide: RQ (kg)= 454.00) Copper Sulfate: RQ (lb)= 10, Ammonium chloride: RQ (lb)= 5000.00, Ammonium hydroxide: RQ (lb)= 1000.00
DOT reportable quantity kg (calculated) Copper Sulfate: RQ (kg)= 93.00, Ammonium chloride: RQ (kg)= 13353.00, Ammonium hydroxide: RQ (kg)= 3153.00
DOT Reportable Quantity lbs. (calculated) Copper Sulfate: RQ (lb)= 204.00, Ammonium chloride: RQ (lb)= 29412.00, Ammonium hydroxide: RQ (lb)= 6944.00
Special Provisions B2, IB2, T11, TP2, TP27
DOT Marine Pollutant P
Marine pollutant Ammonium hydroxide
Description UN1760, Corrosive liquids, n.o.s. (Ammonium hydroxide), 8, II, Marine pollutant
Emergency Response Guide Number 154

TDG

UN number or ID number UN1760
UN proper shipping name Corrosive liquid, n.o.s.
Transport hazard class(es) 8
Packing group II
Special Provisions 16
Marine pollutant Ammonium hydroxide, Copper Sulfate.
Description UN1760, Corrosive liquid, n.o.s. (Ammonium hydroxide), 8, II

MEX

UN number or ID number	UN1760
UN proper shipping name	Corrosive liquid, n.o.s.
Transport hazard class(es)	8
Packing group	II
Technical Name	Ammonium hydroxide
Description	UN1760, Corrosive liquid, n.o.s. (Ammonium hydroxide), 8, II
Special Provisions	274

ICAO (air)

UN number or ID number	UN1760
UN proper shipping name	Corrosive liquid, n.o.s.
Transport hazard class(es)	8
Packing group	II
Description	UN1760, Corrosive liquid, n.o.s. (Ammonium hydroxide), 8, II
Special Provisions	A3

IATA

UN number or ID number	UN1760
UN proper shipping name	Corrosive liquid, n.o.s.
Transport hazard class(es)	8
Packing group	II
Technical Name	Ammonium hydroxide
Description	UN1760, Corrosive liquid, n.o.s. (Ammonium hydroxide), 8, II
Special Provisions	A3, A803
ERG Code	8L

IMDG

UN number or ID number	UN1760
UN proper shipping name	Corrosive liquid, n.o.s.
Transport hazard class(es)	8
Packing group	II
EmS-No	F-A, S-B
Special Provisions	274
Marine pollutant	P
Marine Pollutant	Ammonium hydroxide
Description	UN1760, Corrosive liquid, n.o.s. (Ammonium hydroxide, Ammonium hydroxide), 8, II, Marine pollutant

RID

UN number or ID number	UN1760
UN proper shipping name	Corrosive liquid, n.o.s.
Transport hazard class(es)	8
Packing group	II
Classification code	C9
Special Provisions	274
Description	UN1760, Corrosive liquid, n.o.s. (Ammonium hydroxide), 8, II, Environmentally Hazardous

ADR

UN number or ID number	UN1760
UN proper shipping name	Corrosive liquid, n.o.s.
Transport hazard class(es)	8
Packing group	II
Classification code	C9
Tunnel restriction code	(E)
Special Provisions	274
Description	UN1760, Corrosive liquid, n.o.s. (Ammonium hydroxide), 8, II, (E), Environmentally Hazardous

ADN

UN number or ID number	UN1760
UN proper shipping name	Corrosive liquid, n.o.s.
Transport hazard class(es)	8
Packing group	II

Classification code	C9
Special Provisions	274
Description	UN1760, Corrosive liquid, n.o.s. (Ammonium hydroxide), 8, II, Environmentally Hazardous
Equipment Requirements	PP, EP

15. Regulatory information

International Inventories

TSCA Complies

Chemical name	CAS No	US TSCA Inventory listing	US TSCA inactive/active designation
Water	7732-18-5	Present	Active
Ammonium chloride	12125-02-9	Present	Active
Ammonium hydroxide	1336-21-6	Present	Active
Molybdenum compound	-	Present	Active
Copper Sulfate	7758-98-7	Present	Active
Thickener	-	Present	Active

DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Does not comply
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	Extremely Hazardous	Reportable Quantity (RQ)
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		Substances RQs	
Ammonium chloride 12125-02-9	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Ammonium hydroxide 1336-21-6	1000 lb	100 lb	RQ 1000 lb final RQ RQ 454 kg final RQ
Copper Sulfate 7758-98-7	10 lb	-	RQ 10 lb final RQ RQ 4.54 kg final RQ

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Water 7732-18-5	-	-	X
Ammonium chloride 12125-02-9	X	-	X
Ammonium hydroxide 1336-21-6	X	-	X
Copper Sulfate 7758-98-7	X	-	X
Thickener	X	-	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA	Health hazards 3	Flammability 0	Instability 0	Special hazards -
HMIS	Health hazards 3	Flammability 0	Physical hazards 0	Personal protection X

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: Exposure controls/personal protection**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 EPA (Environmental Protection Agency)
 Acute Exposure Guideline Level(s) (AEGl(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 Japan GHS Classification
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)

Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Revision date 19-Dec-2022
Revision Note No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet