# SAFETY DATA SHEET



Revision date 22-Sep-2022

**Revision Number** 1

## 1. Identification

Product identifier

Product Name B/OX 325

Other means of identification

Product Code(s) EPI-0163

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 1
Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 1A

## Hazards not otherwise classified (HNOC)

Not applicable

## Label elements

Danger

#### Hazard statements

Harmful if swallowed Fatal if inhaled

Causes severe skin burns and eye damage

May cause cancer



Appearance Light blue solution

Physical state Liquid

Odor Characteristic

## **Precautionary Statements - Prevention**

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Wear protective gloves/protective clothing/eye protection/face protection

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Do not breathe dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area

Wear respiratory protection

## **Precautionary Statements - Response**

Call a POISON CENTER or doctor/physician if you feel unwell

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

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower

Call a POISON CENTER or doctor/physician if you feel unwell

Wash contaminated clothing before reuse

IF INHALED: Remove person to fresh air and keep comfortable for breathing

If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell

Rinse mouth

Do NOT induce vomiting

## **Precautionary Statements - Storage**

Store locked up

Store in a well-ventilated place. Keep container tightly closed

#### **Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

### Unknown acute toxicity

## 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	60-70	*
Fluoroboric acid	16872-11-0	15-25	*
Nitric acid	7697-37-2	6-10	*
Cupric sulfate	7758-98-7	0.5-0.9	*

<sup>\*</sup>The exact percentage (concentration) of composition has been withheld as a trade secret.

# 4. First-aid measures

#### **Description of first aid measures**

**General advice** Show this safety data sheet to the doctor in attendance. Immediate medical attention is

required. IF exposed or concerned: Get medical advice/attention.

**Inhalation** If breathing has stopped, give artificial respiration. Get medical attention immediately.

Remove to fresh air. 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. If skin irritation or rash occurs: Get medical advice/attention. Wash

contaminated clothing before reuse.

**Ingestion** Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water.

Never give anything by mouth to an unconscious person. Get medical attention immediately

if symptoms occur.

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. Do not breathe vapor or mist. 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. Use personal protective equipment as required. See section 8

for more information. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

**Symptoms** Coughing and/ or wheezing. Difficulty in breathing. Burning sensation.

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.

## 5. Fire-fighting measures

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 Th

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.

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## 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Do not breathe vapor

or mist. Use personal protective equipment as required. Evacuate personnel to safe areas.

Keep people away from and upwind of spill/leak. Attention! Corrosive material.

**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. Do not breathe vapor or mist. 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.

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. Store locked up. Protect from moisture. Store away from other materials.

# 8. Exposure controls/personal protection

## Control parameters

## **Exposure Limits**

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Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Fluoroboric acid	TWA: 2.5 mg/m <sup>3</sup> F	TWA: 2.5 mg/m <sup>3</sup> F	IDLH: 250 mg/m <sup>3</sup> F
16872-11-0	-	(vacated) TWA: 2.5 mg/m <sup>3</sup>	_
Nitric acid	STEL: 4 ppm	TWA: 2 ppm	IDLH: 25 ppm
7697-37-2	TWA: 2 ppm	TWA: 5 mg/m <sup>3</sup>	TWA: 2 ppm
		(vacated) TWA: 2 ppm	TWA: 5 mg/m <sup>3</sup>
		(vacated) TWA: 5 mg/m <sup>3</sup>	STEL: 4 ppm
		(vacated) STEL: 4 ppm	STEL: 10 mg/m <sup>3</sup>
		(vacated) STEL: 10 mg/m <sup>3</sup>	
Cupric sulfate	TWA: 1 mg/m <sup>3</sup> Cu dust and mist	-	IDLH: 100 mg/m <sup>3</sup> Cu dust and
7758-98-7			mist
			TWA: 1 mg/m³ Cu dust and
			mist

## **Biological occupational exposure limits**

Chemical hame	ACGIN

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Fluoroboric acid 2 mg/L - urine (Fluoride) - prior to shift 16872-11-0 3 mg/L - urine (Fluoride) - end of shift

## **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** When workers are facing concentrations above the exposure limit they must use

appropriate certified respirators.

General hygiene considerations Avoid contact with skin, eyes or clothing. Do not breathe vapor or mist. 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 Light blue solution
Color light blue
Odor Characteristic

Property Values Remarks • Method

 pH
 0 - 1.5
 None known

 Melting point / freezing point
 0 °C / 32 °F
 None known

 Boiling point / boiling range
 133.3 - 105.5 °C / 271.9 None known

221.9 °F

Flash pointNo data availableNone knownRelative density1.18 - 1.2None knownWater solubilityCompletelyNone known

Other information

VOC Content (%)

## 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** Excessive heat. Exposure to air or moisture over prolonged periods.

**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. Fatal if inhaled. (based on

components). Corrosive by inhalation. 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.

**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 Coughing and/ or wheezing. Difficulty in breathing. Redness. Burning. May cause

blindness.

## **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) 494.80 mg/kg ATEmix (inhalation-dust/mist) 0.046 mg/l ATEmix (inhalation-vapor) 29.4421 mg/l

## **Unknown acute toxicity**

**Component Information** 

Odnipoliciit illiorillation			
Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Fluoroboric acid 16872-11-0	100 - 200 mg/kg (Rat)	-	-
Nitric acid 7697-37-2	-	-	= 2500 ppm (Rat) 1 h
Cupric sulfate 7758-98-7	= 300 mg/kg (Rat)	> 2000 mg/kg (Rat)	-

## 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.

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Causes burns.

**Respiratory or skin sensitization** No information available.

**Germ cell mutagenicity** No information available.

Carcinogenicity Contains a known or suspected carcinogen. Classification based on data available for

ingredients. May cause cancer.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Nitric acid	-	Group 2A	-	X
7697-37-2		Group 1		

## Legend

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure**No information available.

Target organ effects Respiratory system, Eyes, Skin, Teeth.

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	Crustacea
			microorganisms	
Fluoroboric acid	-	LC50: =2600mg/L (96h,	-	-
16872-11-0		Brachydanio rerio)		
Cupric sulfate	-	LC50: =0.1mg/L (96h,	-	EC50: 0.0058 -
7758-98-7		Oncorhynchus mykiss)		0.0073mg/L (48h,
				Daphnia magna)

Persistence and degradability No information available.

**Bioaccumulation** There is no data for this product.

**Component Information** 

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Chemical name	Partition coefficient
Nitric acid	-2.3
7697-37-2	

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)
Packing group

Reportable Quantity (RQ) (Cupric sulfate: RQ (kg)= 4.54, Nitric acid: RQ (kg)= 454.00) Cupric sulfate: RQ (lb)= 10,

Cupric sulfate: RQ (kg)= 504.00, Nitric acid: RQ (kg)= 5279.00

Nitric acid: RQ (lb)= 1000.00

DOT reportable quantity kg

(calculated)

**DOT Reportable Quantity lbs.** Cupric sulfate: RQ (lb)= 1111.00, Nitric acid: RQ (lb)= 11628.00

(calculated)

Special Provisions B2, IB2, T11, TP2, TP27

DOT Marine Pollutant

Marine pollutant Nitric acid, Cupric sulfate

Description UN1760, Corrosive liquids, n.o.s. (Fluoroboric acid, Nitric acid), 8, II, Marine pollutant

(Nitric acid, Cupric sulfate)

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**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 Nitric acid, Cupric sulfate.

**Description** UN1760, Corrosive liquid, n.o.s. (Fluoroboric acid, Nitric acid), 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 | |

Technical Name Fluoroboric acid, Nitric acid

**Description** UN1760, Corrosive liquid, n.o.s. (Fluoroboric acid, Nitric acid), 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 | |

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**Description** UN1760, Corrosive liquid, n.o.s. (Fluoroboric acid, Nitric acid), 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 | |

Technical Name Fluoroboric acid, Nitric acid

Description UN1760, Corrosive liquid, n.o.s. (Fluoroboric acid, Nitric acid), 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 Nitric acid

**Description** UN1760, Corrosive liquid, n.o.s. (Fluoroboric acid, Nitric acid, Nitric acid), 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. (Fluoroboric acid, Nitric acid), 8, II, Environmentally

Hazardous

<u>ADR</u>

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. (Fluoroboric acid, Nitric acid), 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. (Fluoroboric acid, Nitric acid), 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
Fluoroboric acid	16872-11-0	Present	Active
Nitric acid	7697-37-2	Present	Active
Trade secret	-	Present	Active
Cupric sulfate	7758-98-7	Present	Active
Trade secret	-	Present	Active
Trade secret	-	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 Substances RQs	Reportable Quantity (RQ)
Nitric acid 7697-37-2	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ
Cupric 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.

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#### U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Water 7732-18-5	-	-	Х
Fluoroboric acid 16872-11-0	Х	-	-
Nitric acid 7697-37-2	X	-	Х
Trade secret	-	-	X
Cupric sulfate 7758-98-7	Х	-	Х

#### U.S. EPA Label Information

**EPA Pesticide Registration Number** Not applicable

## 16. Other information

NFPAHealth hazards4Flammability0Instability0Special hazards-HMISHealth hazards4 \*Flammability0Physical hazards0Personal protectionX

Chronic Hazard Star Legend \*= Chronic Health Hazard

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 22-Sep-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