



## Safety Data Sheet

Material Name: B/Ox 322-B

SDS ID: EPI-0125

### Section 1 - PRODUCT AND COMPANY IDENTIFICATION

**Material Name**

B/Ox 322-B

**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.**

Acute Toxicity - Oral - Category 4

Acute Toxicity - Inhalation - Vapor - Category 3

Skin Corrosion/Irritation - Category 1

Serious Eye Damage/Eye Irritation - Category 1

Specific Target Organ Toxicity - Single Exposure - Category 1 ( respiratory system , heart )

Specific Target Organ Toxicity - Single Exposure - Category 2

Specific Target Organ Toxicity - Repeated Exposure - Category 1 ( respiratory system , teeth , bones )

Specific Target Organ Toxicity - Repeated Exposure - Category 2

**GHS Label Elements**

**Symbol(s)**



**Signal Word**

Danger

**Hazard Statement(s)**

Harmful if swallowed.

Toxic if inhaled.

Causes severe skin burns and eye damage.

Causes damage to organs.

May cause damage to organs.

Causes damage to organs through prolonged or repeated exposure.

May cause damage to organs through prolonged or repeated exposure.

**Precautionary Statement(s)**

**Prevention**



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Use only outdoors or in a well-ventilated area.

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

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

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

### **Response**

If exposed: Call a POISON CENTER or doctor/physician.

If exposed or concerned: Call a POISON CENTER or doctor/physician.

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

Store locked up.

### **Disposal**

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

## **Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS**

CAS	Component Name	Percent
7732-18-5	Water	60-80
7647-01-0	Hydrogen chloride	7-13
1341-49-7	Ammonium bifluoride	0.5-1.5

## **Section 4 - FIRST AID MEASURES**

### **Inhalation**

IF INHALED: Remove person to fresh air and keep comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration.

### **Skin**

For skin contact flush with large amounts of water while removing contaminated clothing.

### **Eyes**

In case of contact, immediately flush eyes with large amounts of water, continuing to flush for 15 minutes. If irritation persists get medical attention.

### **Ingestion**

If swallowed, give milk or water to dilute. Seek medical attention immediately. Never give anything by mouth to an unconscious person. Do not induce vomiting unless directed to do so by medical personnel.

### **Most Important Symptoms/Effects**



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### Acute

Hydrogen chloride or hydrochloric acid is a corrosive acid. Chronic exposure may be associated with changes in pulmonary function, chronic bronchitis, dermatitis, erosion of dental enamel, conjunctivitis and upper respiratory tract abnormalities.

## 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

Hydrogen Chloride and Hydrogen gas.

### Fire Fighting Measures

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

## Section 6 - ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment and Emergency Procedures

Isolate area. Keep unnecessary personnel away.

### Methods and Materials for Containment and Cleaning Up

Mix with large amounts of DRY inert absorbent material such as DRY soda ash or DRY sand. The soda ash will react with the acid releasing carbon dioxide. Make sure there is sufficient ventilation before neutralizing the acidic material.

### Environmental Precautions

Do not allow the spilled product to enter public drainage system or open water courses. Do not discharge into sewers or waterways.

## Section 7 - HANDLING AND STORAGE

### Precautions for Safe Handling

Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

### Conditions for Safe Storage, Including any Incompatibilities

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

Store locked up.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### Component Exposure Limits

Hydrogen chloride	7647-01-0
ACGIH:	2 ppm Ceiling
NIOSH:	5 ppm Ceiling ; 7 mg/m3 Ceiling



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	50 ppm IDLH
Europe:	5 ppm TWA ; 8 mg/m3 TWA
	10 ppm STEL ; 15 mg/m3 STEL
OSHA (US):	5 ppm Ceiling ; 7 mg/m3 Ceiling
Mexico:	2 ppm Ceiling

### ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

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

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Clear yellow solution	<b>Physical State</b>	Liquid
<b>Odor</b>	Odorless	<b>Color</b>	Not available
<b>Odor Threshold</b>	Not available	<b>pH</b>	<1
<b>Melting Point</b>	Not available	<b>Boiling Point</b>	218 - 222 °F
<b>Boiling Point Range</b>	Not available	<b>Freezing point</b>	32 °F (0 °C)
<b>Evaporation Rate</b>	(Approx. equal to Water)	<b>Flammability (solid, gas)</b>	Not available
<b>Autoignition Temperature</b>	Not available	<b>Flash Point</b>	Not available
<b>Lower Explosive Limit</b>	Not available	<b>Decomposition temperature</b>	Not available
<b>Upper Explosive Limit</b>	Not available	<b>Vapor Pressure</b>	Not available
<b>Vapor Density (air=1)</b>	(Approx. equal to water)	<b>Specific Gravity (water=1)</b>	1.19 - 1.25
<b>Water Solubility</b>	Completely	<b>Partition coefficient: n-octanol/water</b>	Not available
<b>Viscosity</b>	Not available	<b>Kinematic viscosity</b>	Not available
<b>Solubility (Other)</b>	Not available	<b>Density</b>	Not available



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VOC	0	Molecular Weight	Not available
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### 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 strong oxidizing agents. Explosive HYDROGEN GAS may be released if aqueous solutions of this material come into contact with reactive metals (IRON, ZINC, ALUMINUM).

#### Incompatible Materials

This product may react with oxidizing agents. This product may react with strong alkalis. Cyanides, sulfides, and Carbides.

#### Hazardous decomposition products

Hydrogen chloride, hydrogen, and chlorine.

### 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 LD50 Rat >90 mL/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

##### Ammonium bifluoride (1341-49-7)

Oral LD50 Rat 130 mg/kg

#### 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.

##### Irritation/Corrosivity Data

No data available.

##### Respiratory Sensitization

No data available.

##### Dermal Sensitization



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No data available.

### Component Carcinogenicity

Hydrogen chloride	7647-01-0
ACGIH:	A4 - Not Classifiable as a Human Carcinogen
IARC:	Monograph 54 [1992] (Group 3 (not classifiable))

### Germ Cell Mutagenicity

No data available.

### Tumorigenic Data

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.

### Aspiration hazard

No data available.

### Medical Conditions Aggravated by Exposure

No data available.

## Section 12 - ECOLOGICAL INFORMATION

### Ecotoxicity

Hydrochloric acid will infiltrate the soil. The presence of water in the soil will influence the rate of chemical movement in the soil. Hydrochloric acid will dissolve some of the soil material. The acid will be neutralized to some degree. Significant amounts of acid are expected to remain for transport through soil to ground water table.

Hydrochloric acid will dissociate in water almost completely.

### Component Analysis - Aquatic Toxicity

No LOLI ecotoxicity data are available for this product's components.

## 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.

### Component Waste Numbers

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

## Section 14 - TRANSPORT INFORMATION

### ADN Information:

Shipping Name: CORROSIVE LIQUID, N.O.S. , ( Contains: Ammonium bifluoride. , Hydrogen chloride. )

Hazard Class: 8

UN#: UN1760

Packing Group: II



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**Required Label(s):** Corrosive

**ADR Information:**

**Shipping Name:** CORROSIVE LIQUID, N.O.S. , ( Contains: Ammonium bifluoride. , Hydrogen chloride. )

**Hazard Class:** 8

**UN#:** UN1760

**Packing Group:** II

**Required Label(s):** Corrosive

**US DOT Information:**

**Shipping Name:** CORROSIVE LIQUIDS, N.O.S. , ( Contains: Ammonium bifluoride. , Hydrogen chloride. )

**Hazard Class:** 8

**UN/NA #:** UN1760

**Packing Group:** II

**Required Label(s):** Corrosive

**IATA Information:**

**Shipping Name:** CORROSIVE LIQUID, N.O.S. , ( Contains: Ammonium bifluoride. , Hydrogen chloride. )

**Hazard Class:** 8

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**Required Label(s):** Corrosive

**ICAO Information:**

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**Packing Group:** II

**Required Label(s):** Corrosive

**IMDG Information:**

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**Hazard Class:** 8

**UN#:** UN1760

**Packing Group:** II

**Required Label(s):** Corrosive

**RID Information:**

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**UN#:** UN1760

**Packing Group:** II

**Required Label(s):** Corrosive

**TDG Information:**

**Shipping Name:** CORROSIVE LIQUID, N.O.S. , ( Contains: Ammonium bifluoride. , Hydrogen chloride. )



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Packing Group: II

Required Label(s): Corrosive

International Bulk Chemical Code

This material contains one or more of the following chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Hydrogen chloride	7647-01-0
IBC Code:	Category Z

### 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.

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 )
SARA 304:	5000 lb EPCRA RQ gas only )
Ammonium bifluoride	1341-49-7
CERCLA:	100 lb final RQ ; 45.4 kg final RQ

#### SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories

Acute toxicity; Skin Corrosion/Irritation; Serious Eye Damage/Eye Irritation; Specific Target Organ Toxicity

#### U.S. State Regulations

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

Component	CAS	CA	MA	MN	NJ	PA
Water	7732-18-5	No	No	No	No	Yes
Hydrogen chloride	7647-01-0	Yes	Yes	Yes	Yes	Yes
Ammonium bifluoride	1341-49-7	Yes	Yes	No	Yes	Yes





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### California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

Not listed under California Proposition 65.

### Canada Regulations

This material is a controlled product under Canadian WHMIS regulations.

### 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

Hydrogen chloride	7647-01-0
	1 %

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

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	No	Yes	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW	VN (Draft)
No	Yes	Yes	Yes	Yes	Yes	Yes

### Hydrogen chloride (7647-01-0)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW	VN (Draft)
Yes	Yes	Yes	Yes	Yes	Yes	Yes

### Ammonium bifluoride (1341-49-7)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW	VN (Draft)
Yes	Yes	Yes	Yes	Yes	Yes	Yes

## Section 16 - OTHER INFORMATION



## Safety Data Sheet

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### HMIS Rating

Health: 2 Fire: 0 Reactivity: 0

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

### NFPA Ratings

Health: 2 Fire: 0 Instability: 0 Other:

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

### Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania\*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); 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; EC - European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); 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; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL) , KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; 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; MX - Mexico; Ne- Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL - Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL- Permissible Exposure Limit; 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; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA - Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW - Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

### 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..