

SAFETY DATA SHEET



Revision date 27-Dec-2022

Revision Number 1

1. Identification

Product identifier

Product Name B/OX 318

Other means of identification

Product Code(s) EPI-0276

UN number or ID number UN2582

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

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Carcinogenicity	Category 1A

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Danger

Hazard statements

Causes skin irritation
Causes serious eye irritation
May cause cancer

**Appearance** Brown - orange solution**Physical state** Liquid**Odor** Characteristic acid odor**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

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention
 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: Wash with plenty of water and soap
 If skin irritation occurs: Get medical advice/attention
 Take off contaminated clothing and wash it before reuse
 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
 Call a POISON CENTER or doctor/physician if you feel unwell
 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
 IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other information

May be harmful if swallowed.

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Chemical name	CAS No	Weight-%	Trade secret
Water	7732-18-5	85-95	*
Ferric chloride	7705-08-0	5-15	*
Hydrochloric acid	7647-01-0	0.5-1	*
Surfactant	Trade secret	0.05-0.1	*

*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. Get medical attention immediately if symptoms occur.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get medical attention immediately if symptoms occur.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms May cause redness and tearing of the eyes. Burning sensation.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

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	No information available.
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	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required.
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 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.

8. Exposure controls/personal protection

Control parameters

Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Ferric chloride 7705-08-0	TWA: 1 mg/m ³ Fe	(vacated) TWA: 1 mg/m ³ Fe	TWA: 1 mg/m ³ Fe
Hydrochloric acid 7647-01-0	Ceiling: 2 ppm	Ceiling: 5 ppm Ceiling: 7 mg/m ³	IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m ³

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 If splashes are likely to occur, wear safety glasses with side-shields.

Hand protection Wear suitable gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing.

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 Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state Liquid
Appearance Brown - orange solution
Color Brown/orange

Odor Characteristic acid odor

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	0 - 1.1	None known
Melting point / freezing point	0 °C / 32 °F	None known
Boiling point / boiling range	100 °C / 212 °F	None known
Flash point	No data available	None known
Relative density	1.08 - 1.093	None known
Water solubility	Completely	None known
<u>Other information</u>		
VOC Content (%)	0	

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	None known based on information supplied.
Incompatible materials	Strong acids. Strong bases. Strong oxidizing agents.
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. May cause irritation of respiratory tract.
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.
Skin contact	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	Redness. May cause redness and tearing of the eyes.
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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)	4,549.70 mg/kg
ATEmix (inhalation-gas)	56,330.2200 ppm
ATEmix (inhalation-dust/mist)	50.100 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Ferric chloride 7705-08-0	= 450 mg/kg (Rat)	-	-
Hydrochloric acid 7647-01-0	238 - 277 mg/kg (Rat)	> 5010 mg/kg (Rabbit)	= 1.68 mg/L (Rat) 1 h

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. Irritating to skin.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye irritation.

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
Hydrochloric acid 7647-01-0	-	Group 3	-	X

Legend

IARC (International Agency for Research on Cancer)

Group 3 - Not Classifiable as to Carcinogenicity in 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 Liver, Respiratory system, Eyes, Skin, Gastrointestinal tract (GI).

Aspiration hazard No information available.

Other adverse effects No information available.

Interactive effects No information available.

12. Ecological information

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Ferric chloride	-	LC50: 20.95 - 22.56mg/L	-	EC50: =27.9mg/L (48h,

7705-08-0		(96h, Pimephales promelas) LC50: =20.26mg/L (96h, Lepomis macrochirus)	Daphnia magna) EC50: =9.6mg/L (48h, Daphnia magna)
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Persistence and degradability No information available.

Bioaccumulation There is no data for this product.

Component Information

Chemical name	Partition coefficient
Ferric chloride 7705-08-0	-4

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 UN2582
Proper shipping name Ferric chloride, solution
Transport hazard class(es) 8
Packing group III
Reportable Quantity (RQ) (Ferric chloride: RQ (kg)= 454.00) Ferric chloride: RQ (lb)= 1000.00
DOT reportable quantity kg (calculated) Ferric chloride: RQ (kg)= 5675.00
DOT Reportable Quantity lbs. (calculated) Ferric chloride: RQ (lb)= 12500.00
Special Provisions B15, IB3, T4, TP1
DOT Marine Pollutant NP
Description UN2582, Ferric chloride, solution, 8, III
Emergency Response Guide Number 154

TDG

UN number or ID number UN2582
UN proper shipping name Ferric chloride solution
Transport hazard class(es) 8
Packing group III
Description UN2582, Ferric chloride solution, 8, III

MEX

UN number or ID number UN2582
UN proper shipping name Ferric chloride solution
Transport hazard class(es) 8
Packing group III
Description UN2582, Ferric chloride solution, 8, III
Special Provisions 223

ICAO (air)

UN number or ID number UN2582
 UN proper shipping name Ferric chloride solution
 Transport hazard class(es) 8
 Packing group III
 Description UN2582, Ferric chloride solution, 8, III
 Special Provisions A3

IATA

UN number or ID number UN2582
 UN proper shipping name Ferric chloride solution
 Transport hazard class(es) 8
 Packing group III
 Description UN2582, Ferric chloride solution, 8, III
 Special Provisions A3, A803
 ERG Code 8L

IMDG

UN number or ID number UN2582
 UN proper shipping name Ferric chloride solution
 Transport hazard class(es) 8
 Packing group III
 EmS-No F-A, S-B
 Special Provisions 223
 Marine pollutant NP
 Description UN2582, Ferric chloride solution, 8, III

RID

UN number or ID number UN2582
 UN proper shipping name Ferric chloride solution
 Transport hazard class(es) 8
 Packing group III
 Classification code C1
 Description UN2582, Ferric chloride solution, 8, III

ADR

UN number or ID number UN2582
 UN proper shipping name Ferric chloride solution
 Transport hazard class(es) 8
 Packing group III
 Classification code C1
 Tunnel restriction code (E)
 Description UN2582, Ferric chloride solution, 8, III, (E)

ADN

UN number or ID number UN2582
 UN proper shipping name Ferric chloride solution
 Transport hazard class(es) 8
 Packing group III
 Classification code C1
 Description UN2582, Ferric chloride solution, 8, III
 Equipment Requirements PP, EP

15. Regulatory information**International Inventories**

TSCA Complies

Chemical name	CAS No	US TSCA Inventory listing	US TSCA inactive/active designation
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Chemical name	CAS No	US TSCA Inventory listing	US TSCA inactive/active designation
Water	7732-18-5	Present	Active
Ferric chloride	7705-08-0	Present	Active
Hydrochloric acid	7647-01-0	Present	Active
Surfactant	-	Present	Active

DSL/NDSL	Complies
EINECS/ELINCS	Does not comply
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
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)
Ferric chloride 7705-08-0	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ
Hydrochloric acid 7647-01-0	5000 lb	5000 lb	RQ 5000 lb final RQ RQ 2270 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
Ferric chloride 7705-08-0	X	-	X
Hydrochloric acid 7647-01-0	X	-	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA Health hazards 2 Flammability 0 Instability 0 Special hazards -
HMIS Health hazards 1* Flammability 0 Physical hazards 0 Personal protection X
*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

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 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