

SAFETY DATA SHEET

Preparation Date: 04/14/2015

Revision date 12/6/2019

Revision Number: G3

1. IDENTIFICATION

Product identifier

Product code: E3490
Product Name: ETIDRONIC ACID

Other means of identification

Synonyms:

1-Hydroxy-1,1-diphosphonoethane
 (1-Hydroxyethylene)diphosphonic acid
 (1-Hydroxyethylidene)bis(phosphonic acid)
 (1-Hydroxyethylidene)diphosphonic acid
 (Hydroxyethylidene)diphosphonic acid
 1,1,1-Ethanetriol diphosphonate
 1-Hydroxyethane-1,1-bisphosphonic acid
 1-Hydroxyethane-1,1-diphosphonate
 1-Hydroxyethane-1,1-diphosphonic acid
 1-Hydroxyethanediphosphonic acid
 1-Hydroxyethylidene-1,1-biphosphonate
 1-Hydroxyethylidene-1,1-bisphosphonate
 1-Hydroxyethylidene-1,1-diphosphonic acid
 Acetodiphosphonic acid
 Acide etidronique [French]
 Acido etidronico [Spanish]
 Ethane-1-hydroxy-1,1-diphosphonate
 Ethane-1-hydroxy-1,1-diphosphonic acid
 Hydroxyethane-1,1-diphosphonic acid
 Hydroxyethanediphosphonic acid
 Oxyethylidenediphosphonic acid
 Phosphonic acid, (1-hydroxyethylidene)bis-
 Phosphonic acid, (1-hydroxyethylidene)di-
 Phosphonic acid, 1-hydroxy-1,1-ethanediyl ester

CAS #: 2809-21-4
RTECS # SZ8562100
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300

Contact Person: Tom Tyner (USA - West Coast)

Contact Person: Ibad Tirmiz (USA - East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Serious eye damage/eye irritation	Category 2A
Corrosive to metals	Category 1

Label elements

Warning

Hazard statements

Causes serious eye irritation

May be corrosive to metals



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

May be harmful if swallowed

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling

Wear eye/face protection

Keep only in original container

Precautionary Statements - Response

Absorb spillage to prevent material damage

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 attention.

Precautionary Statements - Storage

Store in corrosive resistant/ .? container with a resistant inner liner

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight-%
Etidronic Acid	2809-21-4	60
Water	7732-18-5	40

4. FIRST AID MEASURES

First aid measures

General Advice:

National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call

1-800-222-1222.

- Skin Contact:** Wash off immediately with soap and plenty of water. Remove and wash contaminated clothing before re-use. Get medical attention.
- Eye Contact:** Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.
- Inhalation:** Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
- Ingestion:** Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed

- Symptoms** Causes serious eye irritation
May cause skin irritation
Tremors
May cause bleeding or ulceration from the small intestine
Chronic exposure may affect the kidneys

Indication of any immediate medical attention and special treatment needed

- Notes to Physician:** Treat symptomatically.

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Use water spray or water mist, alcohol-resistant foam, Dry chemical or Carbon dioxide (CO₂).

Unsuitable Extinguishing Media: Do not use a solid (straight) water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Hazardous combustion products Carbon Monoxide, Carbon Dioxide. Phosphorus oxides.

Specific hazards May be combustible at high temperatures. May be ignited by heat, sparks or flames.

Special Protective Actions for Firefighters

Specific Methods: No information available

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Remove all sources of ignition.

Environmental precautions Do not let product enter drains. Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container.

Methods for cleaning up Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials. Remove all sources of ignition.

Safe Handling Advice:

Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe vapors or spray mist. Keep away from heat and sources of ignition. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials:

Oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Component	CAS No	OSHA	NIOSH	ACGIH	AIHA WEEL
Etidronic Acid	2809-21-4	None	None	None	None
Water	7732-18-5	None	None	None	None

Canada

Component	CAS No	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Etidronic Acid	2809-21-4	None	None	None	None
Water	7732-18-5	None	None	None	None

Australia and Mexico

Component	CAS No	Australia	Mexico
Etidronic Acid	2809-21-4	None	None
Water	7732-18-5	None	None

Appropriate engineering controls

Engineering measures to reduce exposure: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Goggles

Skin and body protection: Gloves
Long sleeved clothing
Chemical resistant apron

Respiratory protection: Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Respiratory protection is not necessary for normal handling. Good room ventilation or use of local exhaust (fume hood) is sufficient. Use a vapor respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentrations of mist or vapor, inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.

Hygiene measures: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid	Appearance: No information available.	Color: Colorless to pale yellow.
Odor: No information available.	Taste No information available.	Formula C2-H8-O7-P2
Molecular/Formula weight (g/mole): 206.00 g/mol	Flammability (solid, gas) no data available	Flashpoint (°C/°F): No information available
Flash Point Tested according to: Not available	Autoignition Temperature (°C/°F): No information available	Lower Explosion Limit (%): No information available
Upper Explosion Limit (%): No information available	Melting point/range(°C/°F): -40°C/ -40°F	Decomposition temperature(°C/°F): No information available
Boiling point/range(°C/°F): 105°C/ 221°F	Bulk density: No information available	Density (g/cm3): No information available
Specific gravity: 1.45	pH No information available	Vapor pressure @ 20°C (kPa): No information available
Evaporation rate: No information available	Vapor density: No information available	VOC content (g/L): No information available

Odor threshold (ppm):
No information available

**Partition coefficient
(n-octanol/water):**
-2.54

Viscosity:
No information available

Miscibility:
No information available

Solubility:
No information available

10. STABILITY AND REACTIVITY

Reactivity

Reactive with oxidizing agents

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Incompatible materials. Ignition sources.

Incompatible Materials: Oxidizing agents

Hazardous decomposition products: Carbon oxides. Phosphorus oxides.

Other Information

Corrosivity: Corrodes on contact with metals

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion.

Acute Toxicity

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

ATEmix (oral) 4000 mg/kg

ATEmix (dermal) 13158 mg/kg

Component Information

Etidronic Acid

CAS No 2809-21-4

LD50/oral/rat = 3130 mg/kg Oral LD50 Rat; 2400 mg/kg

LD50/oral/mouse = 1900 mg/kg Oral LD50 Mouse

LD50/dermal/rabbit = 7940 mg/kg Dermal LD50 Rabbit; > 10000 mg/kg Dermal LD50 Rabbit

LD50/dermal/rat = No information available

LC50/inhalation/rat = No information available

LC50/inhalation/mouse = No information available

Other LD50 or LC50 information = No information available

Water

CAS No 7732-18-5

LD50/oral/rat = > 90 mL/kg Oral LD50 Rat

LD50/oral/mouse = No information available

LD50/dermal/rabbit = No information available
 LD50/dermal/rat = No information available
 LC50/inhalation/rat = No information available
 LC50/inhalation/mouse = No information available
 Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =
 Value - Acute Toxicity = No information available

LD50/oral/mouse =
 Value - Acute Tox = No information available

LD50/dermal/rabbit
 Value - Acute Toxicity = No information available

LD50/dermal/rat
 VALUE - Acute Tox = No information available

LC50/inhalation/rat
 VALUE-Vapor = No information available
 VALUE-Gas = No information available
 VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
 VALUE-Vapor = No information available
 VALUE - Gas = No information available
 VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: May cause skin irritation.
Eye Contact: Causes moderate to severe eye irritation.
Inhalation Inhalation of mist or vapors may cause respiratory tract irritation and mucous membrane irritation.
Ingestion May be harmful if swallowed. May cause ulceration or bleeding from the duodenum. It may cause twitching or tremors/trembling.
Aspiration hazard No information available.

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

Chronic Toxicity Chronic exposure may affect the kidneys and cause kidney damage.
Sensitization: No information available.
Mutagenic Effects: No information available
Carcinogenic effects: Not considered carcinogenic.

Component	CAS No	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic	Australia - Prohibited Carcinogenic

						Substances	Substances
Etidronic Acid	2809-21-4	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

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

Reproductive toxicity No data is available

Reproductive Effects: May cause adverse reproductive effects
Developmental Effects: No information available
Teratogenic Effects: May cause birth defects (teratogenic effects)

Specific Target Organ Toxicity

STOT - single exposure No information available.
STOT - repeated exposure No information available.
Target Organs: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

Etidronic Acid - 2809-21-4

Fish LC50: =868mg/L (96h, Lepomis macrochirus) LC50: =360mg/L (96h, Oncorhynchus mykiss)

Crustacea EC50: =527mg/L (48h, Daphnia magna)

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility in soil No information available

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Component	CAS No	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Etidronic Acid	2809-21-4	None	None	None	None
Water	7732-18-5	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No:	Not Regulated
Proper Shipping Name:	No information available
Hazard Class	No information available
Subsidiary Class	No information available
Packing group:	No information available
Emergency Response Guide Number	No information available
Marine Pollutant	No data available
DOT RQ (lbs):	No information available
Special Provisions	No Information available
Symbol(s):	No information available
Description:	No information available

TDG (Canada)

UN-No:	Not Regulated
Proper Shipping Name:	No information available
Hazard Class	No information available
Subsidiary Risk:	No information available
Packing Group:	No information available
Marine Pollutant	No Information available
Description:	No information available

ADR

UN Number	Not regulated
Proper Shipping Name:	No information available
Transport hazard class(es)	No information available
Packing group	No information available
Subsidiary Risk:	No information available

IMDG

UN-No:	Not Regulated
Proper Shipping Name:	No information available
Hazard Class:	No information available
Subsidiary Risk:	No information available
Packing Group:	No information available
Marine Pollutant	No information available

RID

UN Number	Not Regulated
Proper Shipping Name:	No information available
Transport hazard class(es)	No information available
Subsidiary Risk:	No information available
Packing group	No information available

ICAO (air)

UN-No:	Not Regulated
Proper Shipping Name:	No information available
Hazard Class	No information available
Subsidiary Risk:	No information available
Packing Group:	No information available

IATA

UN Number	Not Regulated
Proper Shipping Name:	No information available
Transport hazard class(es)	No information available
Subsidiary Risk:	No information available
Packing group	No information available

Precautionary Statements - No information available
Response
Special Provisions No information available

15. REGULATORY INFORMATION

International Inventories

Component	CAS No	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	China IECSC	Australia (AICS)	EINECS-No.
<i>Etidronic Acid</i>	2809-21-4	PresentACTIV E	Present KE-20516	Present	Present (2)-2936	Present	Present	Present 220-552-8
<i>Water</i>	7732-18-5	PresentACTIV E	Present KE-35400	Present	Not present	Present	Present	Present 231-791-2

U.S. Regulations

Etidronic Acid

FDA - Direct Food Additives 21 CFR 173.310, 21 CFR 173.315
FDA - 21 CFR - Total Food Additives 173.310, 173.315, 173.370, 178.1010
- List Sourced from EAFUS

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Component	CAS No	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>Etidronic Acid</i>	2809-21-4	Not Listed	Not Listed	Not Listed	Not Listed
<i>Water</i>	7732-18-5	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Component	CAS No	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
<i>Etidronic Acid</i>	2809-21-4	None	None	None	None	None
<i>Water</i>	7732-18-5	None	None	None	None	None

U.S. TSCA

Component	CAS No	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
<i>Etidronic Acid</i>	2809-21-4	Not Applicable	Not Applicable
<i>Water</i>	7732-18-5	Not Applicable	Not Applicable

Canada

WHMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information:

The WHMIS 2015 classification of this product has not been validated or reviewed yet.

Component

WHMIS 2015 Hazard Classification

Water
7732-18-5 (40)

Not a dangerous product according to HPR classification criteria

Canada Hazardous Products Regulation This product has not been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

DSL/NDSL

Component	CAS No	Canada (DSL)	Canada (NDSL)
Etidronic Acid	2809-21-4	Present	Not Listed
Water	7732-18-5	Present	Not Listed

Component	CAS No	CEPA Schedule I - Toxic Substances
Etidronic Acid	2809-21-4	Not listed
Water	7732-18-5	Not listed

Component	CAS No	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Etidronic Acid	2809-21-4	Not listed
Water	7732-18-5	Not listed

EU Classification

EU GHS - SV - CLP 1272/2008

Component	CAS No	EU GHS - SV - CLP (1272/2008)
Etidronic Acid	2809-21-4	
Water	7732-18-5	

EU - CLP (1272/2008)

R-phrase(s)

R36 - Irritating to eyes

S -phrase(s)

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S37/39 - Wear suitable gloves and eye/face protection

Component	CAS No	Classification	Concentration Limits:	Safety Phrases
Etidronic Acid	2809-21-4		No information	
Water	7732-18-5		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

Xi - Irritant

16. OTHER INFORMATION

Preparation Date: 04/14/2015
Revision date 12/6/2019
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product

is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet