

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name: 1-Hydroxyethylidene-1,1-diphosphonic acid

Synonyms: 1-Hydroxyethane-1,1-diphosphonic acid; 1-Hydroxyethylidene-1,1-diphosphonic acid; HEDP; 1-hydroxyethylidenedi(phosphonic acid); Dequest 2010; Etidronic acid;

Catalog Numbers: HC-328

Company Identification :

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2. COMPOSITION, INFORMATION ON INGREDIENTS

CAS#	Chemical Name	%	EINECS#
2809-21-4	1-Hydroxyethylidene-1,1-diphosphonic acid	50	220-552-8

Hazard Symbols: C

Risk Phrases: 34

3. HAZARDS IDENTIFICATION

Emergency Overview

Harmful in contact with skin and if swallowed or splashed into the eyes. Causes burns.

Potential Health Effects

Eye: Moderately irritating to eyes.

Skin: Moderately irritating to skin. No more than slightly toxic if absorbed.

Ingestion: No more than slightly toxic if swallowed. Significant adverse health effects are not expected to develop if only small amounts (less than a mouthful) are swallowed.

Inhalation: Not available.

Chronic: Not available.

4. FIRST AID MEASURES

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid immediately. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician:

5. FIRE FIGHTING MEASURES

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

Flash point: Non flammable aqueous solution

Hazardous products of combustion: carbon monoxide (CO); carbon dioxide; phosphines.

Extinguishing media: Water spray, foam, dry chemical, or carbon dioxide

Unusual fire and explosion hazards: Decomposes in a fire giving off irritant fumes.

6. ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Contain large spills with dikes and transfer the material to appropriate containers for reclamation or disposal. Absorb remaining material or small spills with an inert material and then place in a chemical waste container. Neutralize washings with soda ash or lime. Flush spill area with water.

7. HANDLING and STORAGE

Handling: Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Use only in a chemical fume hood.

Storage: Keep in a cool, dry, well ventilated place. Stable under normal conditions of handling and storage.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls: Use adequate ventilation to keep airborne concentrations low.

Personal Protective Equipment

Eyes: Wear chemical goggles.

Skin: Wear appropriate protective gloves and clothing to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

Respirators: Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: liquid

Appearance: clear to yellow

Odor: characteristic

pH: 1.88 max (1% aq.sol)

Vapor Pressure: Not available.

Viscosity dl/g 30 deg.C: 38

Boiling Point: Not available.

Freezing/Melting Point: Not available.

Autoignition Temperature: Not available.

Flash Point: Not available.

Explosion Limits, lower: Not available.

Explosion Limits, upper: Not available.

Decomposition: Not available.

Temperature:

Solubility in water: Soluble.

Specific Gravity/Density: 1.44 g/cm³, 20 deg C

Molecular Formula: C₂H₈O₇P₂

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials.

Incompatibilities with Other Materials: Strong oxidizing agents, bases.

Hazardous Decomposition Products: carbon monoxide (CO); carbon dioxide;

phosphorus oxides (PxOy); phosphines

Hazardous Polymerization: Has not been reported.

11. TOXICOLOGICAL INFORMATION

LD50/LC50:

Skin, rabbit LD50 > 7940 mg/kg;

Oral, rat: LD50 = 2400 mg/kg.

Carcinogenicity:

Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA. See actual entry in RTECS for complete information.

12. ECOLOGICAL INFORMATION

Environmental Toxicity:

Fish: 96 h, LC50 Rainbow trout (*Oncorhynchus mykiss*) > 368 mg/l

Algae: 96 h, EC50 Algae (*Selenastrum capricornutum*) 7.2 mg/l.

Biodegradation:

Closed Bottle BOD30/COD 5 %;

Zahn-Wellens Dissolved Organic Carbon removed 33 % 28 d;

Modified SCAS Dissolved Organic Carbon removed 90 %;

Modified OECD Screening theoretical CO2 evolution 2 % 70 d;

13. DISPOSAL CONSIDERATIONS

Dispose of in a manner consistent with federal, state, and local regulations.

14. TRANSPORT INFORMATION

IATA

Shipping Name: CORROSIVE LIQUID, N.O.S.*

Hazard Class: 8

UN Number: 1760

Packing Group: III

IMO

Shipping Name: CORROSIVE LIQUID, N.O.S.

Hazard Class: 8

UN Number: 1760

Packing Group: III

RID/ADR

Shipping Name: CORROSIVE LIQUID, N.O.S.

Hazard Class: 8

UN Number: 1760

Packing Group: III

15. REGULATORY INFORMATION**European/International Regulations**

European Labeling in Accordance with EC Directives

Hazard Symbols: C Corrosive

Risk Phrases:

R34 Causes burns.

Safety Phrases:

S25 Avoid contact with eyes.

S36/37/39 Wear suitable protective clothing, gloves and eye/ face protection.

S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US FEDERA

TSCA: CAS# 2809-21-4 is listed on the TSCA inventory.

16. ADDITIONAL INFORMATION

Date Issued: 05/20/2003

Revision No: 1

Date Revised: 05/20/2003

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