

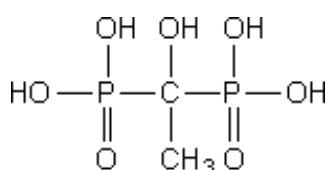
# 1-Hydroxy Ethylidene-1,1-Diphosphonic Acid (HEDP)

CAS No. 2809-21-4

Molecular Formula:  $C_2H_8O_7P_2$

Molecular weight: 206.02

Structural Formula:



## Properties:

**HEDP** is an organophosphoric acid corrosion inhibitor. It can chelate with Fe, Cu, and Zn ions to form stable chelating compounds. It can dissolve the oxidized materials on these metals' surfaces. **HEDP** shows excellent scale and corrosion inhibition effects under temperature 250°C. **HEDP** has good chemical stability under high pH value, hard to be hydrolyzed, and hard to be decomposed under ordinary light and heat conditions. Its acid/alkali and chlorine oxidation tolerance are better than that of other organophosphoric acids (salt). **HEDP** can react with metal ions in water system to form hexa-element chelating complex, with calcium ion in particular. Therefore, **HEDP** has good antiscaling and visible threshold effects. When built together with other water treatment chemicals, it shows good synergistic effects.

The solid state of **HEDP** is crystal powder, suitable for usage in winter and freezing districts. Because of its high purity, it can be used as cleaning agent in electronic fields and as additives in daily chemicals.

## Specification:

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Appearance	Clear, Colorless to pale yellow aqueous solution	White crystal powder
Active content (HEDP), %	58-62	90.0 min
Active content (HEDP·H <sub>2</sub> O), %	-	98.0 min
Phosphorous acid (as PO <sub>3</sub> <sup>3-</sup> ), %	2.0 max	0.8 max
Phosphoric acid (as PO <sub>4</sub> <sup>3-</sup> ), %	0.8 max	0.5 max
Chloride (as Cl <sup>-</sup> ), ppm	100.0 max	100.0max
pH (1% water solution)	2.0 max	2.0 max
Density (20°C), g/cm <sup>3</sup>	1.43-1.47	-
Fe, mg/L	20.0 max	10.0 max
Color APHA (Hazen)	40.0 max	-
Calcium chelating capacity (mg CaCO <sub>3</sub> /g)	500.0 min	

## Usage:

**HEDP** is used as scale and corrosion inhibition in circulating cool water system, oil field and low-pressure boilers in fields such as electric power, chemical industry, metallurgy, fertilizer, etc.. In light woven industry, **HEDP** is used as detergent for metal and nonmetal. In dyeing industry, **HEDP** is used as peroxide stabilizer and dye-fixing agent; In non-cyanide electroplating, **HEDP** is used as chelating agent. The dosage of 1-10mg/L is preferred as scale inhibitor, 10-50mg/L as corrosion inhibitor, and 1000-2000mg/L as detergent. Usually, **HEDP** is used together with polycarboxylic acid.

## Package and Storage:

**HEDP** liquid: 200L plastic drum,IBC(1000L),customers' requirement.

**HEDP** solid: 25kg/bag,customers' requirement.

Storage for ten months in room shady and dry place.

## Safety Protection:

Acidity, Avoid contact with eye and skin, once contacted, flush with water.

## Synonyms:

[HEDP](#); [HEDP\(A\)](#); [HEDPA](#);

[Etidronic Acid](#);

[1-Hydroxy Ethylidene-1,1-Diphosphonic Acid](#);

[Hydroxyethylidene-1,1-diphosphonicacid\(HEDP\)](#);

[1-Hydroxyethylidenediphosphonic Acid](#);

[Hydroxyethylidene Diphosphonic acid\(HEDP\)](#);

[1-Hydroxy-1,1-Ethanediy l ester](#);

[Oxyethylidenediphosphonic Acid\(OEDP\)](#)

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