

HEDP

Phosphonate scale inhibitor and chelating agent for industrial water-treatment formulations.

CAS No. 2809-21-4	EC / List No. 220-552-8	Transport Class 8 — Corrosive
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Product Information

HEDP is 1-hydroxyethylidene-1,1-diphosphonic acid, commonly called etidronic acid. It binds metal ions and is used as a threshold scale inhibitor in formulated industrial water-treatment products. Performance depends on water chemistry, dosage and the complete inhibitor package.

Specifications

Parameter	Specification
Appearance — liquid / solid	Clear, colorless to pale yellow liquid / white crystalline powder
HEDP active — liquid / solid	≥60.0 / ≥90.0 %
HEDP·H ₂ O active — solid	≥98.0 %
Phosphorous acid — liquid / solid	≤2.0 / ≤0.8 %
Phosphoric acid — liquid / solid	≤0.8 / ≤0.5 %
Chloride — liquid / solid	≤0.02 / ≤0.01 %
pH, 1% aqueous solution — both forms	≤2.0
Density at 20°C — liquid	≥1.40 g/cm ³
Iron — liquid / solid (source basis)	≤20.0 / ≤10.0 mg/L
Calcium sequestration — liquid	≥500 mg CaCO ₃ /g

Liquid / solid limits retain the order and units in the local TDS. The solid has separate acid and monohydrate assay bases. Component formula and molecular weight above are for anhydrous HEDP, not the solution or hydrate.

Typical Properties

Property	Typical Value
Molecular formula	C ₂ H ₈ O ₇ P ₂
Molecular weight	206.03 g/mol (anhydrous acid)

Applications

Cooling-water scale control: Phosphonate component for formulated scale and corrosion-control programmes in circulating industrial cooling water. Select dosage using water analysis and evaluate the complete treatment package.

Oilfield injection-water treatment: Scale-control and metal-ion chelation component for injection-water formulations. Evaluate compatibility with brine, other treatment chemicals and the intended operating conditions.

Cleaning and textile formulations: Chelating component for industrial metal cleaning, peroxide-stabilization and textile-process formulations. Check substrate compatibility and working-solution pH before selecting the treatment conditions.

Packaging / Storage

Item	Information
Packing	250 kg HDPE drums (liquid) / 25 kg lined bags (solid)
Storage	Keep closed in compatible containers in a cool, ventilated area. Protect the solid from moisture and separate both forms from strong bases and oxidizing agents.
Handling	Use extraction where mist or dust can form. Wear chemical-resistant gloves, protective clothing and eye/face protection. Add and mix carefully to avoid splashes; do not mix directly with concentrated alkali.

Company Contact

Supplier	Hainan Zhongxin Chemical Co., Ltd. (ZXCHEM)
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