

Safety Data Sheet: HEDP

1. Identification

Product	HEDP; CAS 2809-21-4; EC 220-552-8
Use	Industrial water-treatment and chemical-formulation development.
Company	Hainan Zhongxin Chemical Co., Ltd. (ZXCHEM)
Address	Room 1001, Building A, Caohejing Center, No. 1520 Gumei Road, Xuhui District, Shanghai, China
Telephone / email	+86-21-54265599 / sales@zxchem.com.cn
Emergency contact	ZXCHEM office number above, office hours, China time (UTC+8). For urgent medical assistance contact local emergency services.
Scope	Reference safety information for HEDP. The reference composition, concentration and supply-grade differences are described in Section 3. This document does not certify the composition or transport status of a specific delivered batch or a different formulation.

2. Hazards Identification

Classification	Liquid reference: metal corrosivity Category 1 and serious eye damage Category 1. Solid reference: skin corrosion Category 1B, eye damage Category 1 and single-exposure respiratory irritation Category 3. GHS07 applies to the solid respiratory-irritation reference.
Signal word / symbols	Danger; GHS05, GHS07
Hazard statements	Liquid: H290, potential metal corrosion; H318, serious eye damage. Solid: H314, severe skin and eye burns; H335, respiratory irritation.
Prevention	Use adequate ventilation; avoid inhaling mist. Prevent skin and eye contact. Wear suitable chemical-resistant gloves and eye protection. Wash after handling; keep food and drink out of the work area.
Response	After exposure, stop work and seek medical advice. For severe exposure obtain urgent medical care. Rinse contaminated skin or eyes with water; move an inhalation casualty to fresh air.
Environment	Prevent uncontrolled release to drains, soil or surface water. Collect spills for appropriate disposal.



3. Composition / Information on Ingredients

Reference ingredient	Liquid reference: HEDP CAS 2809-21-4 at 60–<70%, phosphorous acid CAS 10294-56-1 at 1–<2.5% and acetic acid CAS 64-19-7 at 1–<2.5%, with aqueous balance. Solid reference: HEDP CAS 2809-21-4 up to 100%; hydrate composition is not assigned by this solid reference. These source compositions are not a batch analysis of ZXCHEM material.
Supply grade	60% liquid / ≥90% solid (acid basis)
Applicability	The cited concentration or purity describes the reference material. It is not a certificate of analysis for the delivered batch; different solvents or dilutions require the matching supplier safety document.

4. First-Aid Measures

General	Protect the rescuer from exposure and show the product information to medical personnel. Obtain medical advice if symptoms occur or exposure is significant.
Inhalation	Move to fresh air and keep the person comfortable. Seek medical care for breathing difficulty or persistent symptoms. Avoid exposing rescuers to mist.
Skin	Remove contaminated clothing and rinse skin thoroughly with water. Obtain urgent treatment for chemical burns.
Eyes	Rinse gently with clean water for at least 15 minutes. Remove contact lenses when easy and continue rinsing. Obtain urgent medical care.
Ingestion	Rinse the mouth. Do not induce vomiting. Give nothing by mouth to an unconscious person. Obtain emergency medical attention.
Effects / treatment	Liquid can severely damage eyes and corrode metals. Solid can burn skin and eyes and irritate breathing passages. Avoid mist, dust and ingestion. Treatment is symptomatic and directed by a clinician.

5. Fire-Fighting Measures

Extinguishing media	Use water spray, foam, dry chemical or carbon dioxide suited to the surrounding fire.
Hazards	Heating or fire can produce carbon and phosphorus oxides.
Protection	Firefighters require suitable protective clothing and self-contained breathing equipment. Prevent contaminated firefighting water entering drains.

6. Accidental Release Measures

Personnel	Isolate the spill and provide ventilation. Use chemical-resistant gloves and eye protection; avoid contact and mist exposure.
Environment	Contain the release and protect drains and waterways. Report significant environmental contamination to the responsible authority.
Cleanup	Stop the leak if safe. Absorb liquid with a compatible inert material and collect in closed labelled containers. Do not wash into drains.

7. Handling and Storage

Handling	Use controlled transfer and effective ventilation. Avoid generating mist and prevent contamination of the work area.
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.
Incompatibilities	Strong bases and oxidizing agents; prevent contact with unsuitable metals.
Specific use	Evaluate compatibility and appropriate operating conditions in the complete formulation before industrial use.

8. Exposure Controls / Personal Protection

Exposure limits	The solid reference lists no region-specific ingredient occupational limit. Liquid contains acetic acid, for which local workplace limits may apply; evaluate the selected formulation and mist exposure.
Engineering controls	Use local extraction where mist can be generated. Maintain accessible eyewash and emergency washing facilities.
Personal protection	Wear chemical-resistant gloves selected for the task, suitable protective clothing and splash goggles. Add face protection for splash-prone tasks.
Respiratory protection	Use a properly selected respirator under a respiratory-protection program where engineering controls do not adequately limit airborne exposure.
Hygiene	Wash after handling, remove contaminated clothing promptly and do not eat, drink or smoke in the work area.

9. Physical and Chemical Properties

Appearance	Clear liquid / white crystalline powder
Formula / molecular weight	C2H8O7P2 / 206.03 g/mol (anhydrous acid)
Physical forms	Aqueous liquid and crystalline solid
pH, 1% solution, supply TDS	≤2.0
Liquid density, supply TDS	≥1.40 g/cm³ at 20°C
Anhydrous component molecular weight	206.03 g/mol
Other properties	Product-specific values for odor threshold, vapor pressure, partition coefficient, autoignition temperature and viscosity are not supplied by the selected reference set. No values are inferred.

10. Stability and Reactivity

Stability	Handle and store under the recommended conditions. Prevent contamination and unnecessary heating.
Incompatibilities	Strong bases and oxidizing agents; prevent contact with unsuitable metals.
Decomposition	Heating or fire can produce carbon and phosphorus oxides.

11. Toxicological Information

Exposure effects	Liquid can severely damage eyes and corrode metals. Solid can burn skin and eyes and irritate breathing passages. Avoid mist, dust and ingestion.
Reference classification	Liquid reference: metal corrosivity Category 1 and serious eye damage Category 1. Solid reference: skin corrosion Category 1B, eye damage Category 1 and single-exposure respiratory irritation Category 3. GHS07 applies to the solid respiratory-irritation reference.
Toxicological data	Liquid-reference HEDP-component oral rat LD50 1,878 mg/kg. Solid reference: oral rat LD50 3,130 mg/kg and dermal rabbit LD50 >10,000 mg/kg. Differences reflect distinct source data; mixture toxicity is not derived here.

12. Ecological Information

Environmental effects	Solid-reference component values: fish LC50 360 mg/L at 96 h; Daphnia EC50 527 mg/L at 48 h. These are not measurements of the liquid formulation. Prevent release.
Controls	Prevent uncontrolled release, collect spills and dispose of contaminated material through an authorized route.
Assessment	No product-specific PBT/vPvB assessment is claimed. Absence of data does not establish absence of environmental effects.

13. Disposal Considerations

Product	Collect surplus product and contaminated cleanup material for disposal by an authorized chemical-waste contractor in accordance with local requirements.
Packaging	Containers may retain product residues. Do not reuse contaminated packaging without an approved cleaning process; use an authorized disposal route.

14. Transport Information

Classification	Class 8 — Corrosive
UN number	Liquid: UN 3265; solid: UN 3261
Shipping name	Liquid: corrosive liquid, acidic, organic, n.o.s.; solid: corrosive solid, acidic, organic, n.o.s. (HEDP)
Class / packing group	Liquid reference ADR / IMDG / IATA: Class 8, packing group III, marine pollutant no. Solid reference DOT / TDG / IMDG / IATA: Class 8, packing group III.
Transport precautions	Protect packaging and closures from damage, secure loads and prevent releases. This reference is not a shipping declaration for a specific consignment.

15. Regulatory Information

Identity	HEDP; CAS 2809-21-4; EC 220-552-8
HS reference	293149; reference heading rather than a destination customs ruling.
Compliance	Apply applicable workplace, environmental and transport rules. A raw-material listing does not establish authorization for a finished disinfectant or biocidal product.
Assessment	No ZXCHEM-specific chemical safety assessment or destination registration is asserted.

16. Other Information

Hazard meanings	Liquid: H290, potential metal corrosion; H318, serious eye damage. Solid: H314, severe skin and eye burns; H335, respiratory irritation.
Limitations	Prepared as reference safety information for the identified material. It is not a batch analytical certificate or safety assessment of a different solvent-containing formulation.
Revision	2026.2; prepared 2026-10-06. Customer-document branding and title corrected; technical safety data retained.
Document scope	Reference safety information for the material and grade described in Sections 1 and 3. Different concentrations, solvents or formulations require the applicable safety information. This is not a batch analytical certificate.

Revision: 2026.2 | Revision date: 2026-10-06