

Safety Data Sheet: Tetrakis(hydroxymethyl)phosphonium Sulfate (THPS 75%)

1. Identification

Product	Tetrakis(hydroxymethyl)phosphonium Sulfate (THPS 75%); CAS 55566-30-8; EC 259-709-0
Use	Professional industrial formulation ingredient and intermediate 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 Tetrakis(hydroxymethyl)phosphonium Sulfate (THPS 75%). 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	Acute oral toxicity Category 4; acute inhalation toxicity Category 3; skin corrosion Category 1C; serious eye damage Category 1; skin sensitization Category 1; reproductive toxicity Category 1B; acute aquatic toxicity Category 1.
Signal word / symbols	Danger; GHS05, GHS06, GHS08, GHS09
Hazard statements	H302: harmful if swallowed. H314: causes severe skin burns and eye damage. H317: may cause an allergic skin reaction. H331: toxic if inhaled. H360D: may damage the unborn child. H400: very toxic to aquatic life.
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	Tetrakis(hydroxymethyl)phosphonium sulfate, CAS 55566-30-8, ≥75%; water, CAS 7732-18-5, ≤25% in the matched reference. These ranges are not a batch analytical total.
Supply grade	Aqueous solution / Assay ≥75.1%
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	Obtain urgent medical assessment after exposure. Protect rescuers from the corrosive and toxic liquid; provide this sheet to medical personnel.
Inhalation	Move to fresh air and obtain emergency medical help. If breathing stops, trained responders should use suitable assisted-ventilation equipment; avoid direct mouth-to-mouth exposure.
Skin	Remove contaminated clothing while flushing with running water. Continue washing and obtain urgent care for chemical burns.
Eyes	Flush gently with clean water for at least 15 minutes, removing contact lenses when easy. Continue rinsing and obtain immediate medical care.
Ingestion	Rinse the mouth, do not induce vomiting and obtain emergency medical help. Give nothing by mouth to an unconscious person.
Effects / treatment	Corrosive injury and inhalation toxicity may be severe or delayed. A clinician should determine treatment and observation after significant exposure.

5. Fire-Fighting Measures

Extinguishing media	Use water spray, foam, dry chemical or carbon dioxide suited to the surrounding fire.
Hazards	Fire or severe decomposition can release phosphine and carbon, phosphorus and sulfur 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 closed transfer and suitable ventilation. Prevent inhalation and splashes; wear compatible chemical gloves, splash goggles, face protection and protective clothing. Maintain emergency washing facilities.
Storage	Keep sealed and upright in a shaded, dry, ventilated area with restricted access. Protect from heat and segregate from acids, bases, oxidizers and reactive metals.
Incompatibilities	Strong acids, bases, oxidizers and reducing agents; reactive metals.

8. Exposure Controls / Personal Protection

Exposure limits	No product-specific workplace limit is established here. Control transfer mist and apply current local occupational exposure requirements.
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 colorless viscous liquid
Formula / molecular weight	C ₈ H ₂₄ O ₁₂ P ₂ S / 406.28 g/mol
Appearance	Clear colorless viscous liquid
Assay, supply	≥75.1%
pH, supply	3.0–5.0
Other properties	Additional physicochemical properties beyond the stated values are not established for the supply grade. No unstated values are inferred.

10. Stability and Reactivity

Stability	Handle and store under the recommended conditions. Prevent contamination and unnecessary heating.
Incompatibilities	Strong acids, bases, oxidizers and reducing agents; reactive metals.
Decomposition	Fire or severe decomposition can release phosphine and carbon, phosphorus and sulfur oxides.

11. Toxicological Information

Exposure effects	Corrosive and toxic exposure can produce severe injury. Prevent inhalation and reproductive-hazard exposure.
Reference classification	Acute oral toxicity Category 4; acute inhalation toxicity Category 3; skin corrosion Category 1C; serious eye damage Category 1; skin sensitization Category 1; reproductive toxicity Category 1B; acute aquatic toxicity Category 1.
Toxicological data	The reference identifies acute, corrosive and developmental hazards. Numerical animal-study results are not used to certify the supplied batch.

12. Ecological Information

Environmental effects	The matched solution has an acute aquatic hazard. Retain liquid and wash-water spills; biodegradation information does not authorize 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; subsidiary risk 6.1
UN number	UN 2922
Shipping name	Corrosive liquid, toxic, n.o.s. (tetrakis(hydroxymethyl)phosphonium sulfate solution)
Class / packing group	ADG/ADR, DOT, IMDG and IATA: UN 2922, Class 8 with subsidiary risk 6.1, packing group III in the matched aqueous solution reference.
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	Tetrakis(hydroxymethyl)phosphonium Sulfate (THPS 75%); CAS 55566-30-8; EC 259-709-0
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 finished-product authorization.
Assessment	No ZXCHEM-specific chemical safety assessment or destination registration is asserted.

16. Other Information

Hazard meanings	H302: harmful if swallowed. H314: causes severe skin burns and eye damage. H317: may cause an allergic skin reaction. H331: toxic if inhaled. H360D: may damage the unborn child. H400: very toxic to aquatic life.
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.

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