



ARC PHOSPHATES

The Manufacturing Company

Mobile: 7016931615 | Email: info@acrphosphates.com

Web: www.arcphosphates.com

TECHNICAL DATA SHEET (TDS)

Product Name: Tetrasodium Pyrophosphate (TSPP) | **CAS No.:** 7722-88-5 (Anhydrous) / 13472-36-1 (Decahydrate)

Product Overview: Tetrasodium Pyrophosphate is an odorless, white inorganic compound synthesized by the dehydration of disodium phosphate. It acts as an effective buffering agent, emulsifier, dispersant, sequestrant, and water-softening chemical across chemical processing, water treatment, textiles, detergents, and food applications.

1. COMPREHENSIVE TECHNICAL SPECIFICATIONS

Technical Parameter	TSPP Anhydrous Grade	TSPP Decahydrate Grade
Chemical Formula	$\text{Na}_4\text{P}_2\text{O}_7$	$\text{Na}_4\text{P}_2\text{O}_7 \cdot 10\text{H}_2\text{O}$
Molecular Weight	265.90 g/mol	446.06 g/mol
Main Content / Assay (as $\text{Na}_4\text{P}_2\text{O}_7$)	96.5% Min.	98.0% Min.
Phosphorus Pentoxide (P_2O_5 Content)	52.5% – 53.5%	31.0% – 32.0%
pH (1% Solution @ 25°C)	9.8 – 10.8	9.8 – 10.5
Appearance	White Free-Flowing Powder	White Crystalline Powder / Crystals
Water Insoluble Matter	0.10% Max.	0.05% Max.
Iron (Fe) Content	0.01% Max. (100 ppm)	0.005% Max. (50 ppm)
Heavy Metals (as Pb)	10 ppm Max.	10 ppm Max.
Arsenic (As)	3 ppm Max.	3 ppm Max.
Loss on Ignition (L.O.I.)	1.5% Max.	38.0% – 42.0%
Packaging Specification	>25 kg Double Lined PP in HDPE Bag (25 kg / 50 kg HDPE woven bag with inner PE liner)	

2. KEY INDUSTRIAL APPLICATIONS

- Industrial Water Treatment & Boiler Systems:** Functions as a scale inhibitor, dispersant, and water softener by chelating calcium and magnesium hardness ions.
- Detergent & Cleaning Compounds:** Acts as a detergent builder, emulsifier, and alkaline buffer to enhance grease removal and prevent dirt redeposition.
- Textile & Dyeing Operations:** Used as a sequestering agent, bleaching bath stabilizer, and scour additive to prevent metallic oxide staining on fabrics.
- Ceramics & Electroplating:** Works as a deflocculant/viscosity thinner in ceramic clays and electroplating bath additive for metal surface preparation.
- Paper & Rubber Processing:** Serves as a dispersant for coating pigments and stabilizer in synthetic rubber manufacturing.
- Food & Pharmaceutical Grade Applications:** Used as a buffering agent, emulsifier, protein binder, and quality modifier in processed