



TECHNICAL DATA SHEET (TDS)

Product Name: Monosodium Phosphate Anhydrous (MSPA) | **CAS No.:** 7558-80-7 | **EINECS No.:** 231-449-2

Product Overview: Monosodium Phosphate Anhydrous (Sodium Dihydrogen Phosphate) is a white, hygroscopic, highly water-soluble inorganic salt. It serves as a primary acidic pH buffer, sequestrant, emulsifier, and industrial scale control chemical across water treatment, metal surface finishing, detergents, animal feed, and food processing.

1. COMPREHENSIVE TECHNICAL SPECIFICATIONS

Technical Parameter	MSPA Technical Grade	MSPA Food / Pure Grade
Chemical Formula	NaH ₂ PO ₄	NaH ₂ PO ₄
Molecular Weight	119.98 g/mol	119.98 g/mol
Main Content / Assay (as NaH ₂ PO ₄)	98.0% Min.	98.5% Min.
Phosphorus Pentoxide (P ₂ O ₅ Content)	58.0% – 59.0%	58.5% – 59.2%
pH (1% Aqueous Solution @ 25°C)	4.2 – 5.0	4.1 – 4.5
Appearance	White Granular / Fine Powder	White Free-Flowing Crystalline Powder
Water Insoluble Matter	0.20% Max.	0.10% Max.
Loss on Drying (105°C, 2h)	1.0% Max.	1.0% Max.
Iron (Fe) Content	0.005% Max. (50 ppm)	0.002% Max. (20 ppm)
Heavy Metals (as Pb)	10 ppm Max.	10 ppm Max.
Bulk Density	0.85 – 1.05 g/cm ³	0.90 – 1.10 g/cm ³
Packaging Specification	>25 kg Double Lined PP in HDPE Bag (25 kg / 50 kg HDPE woven bag with double PE inner moisture-proof liner)	

2. KEY INDUSTRIAL APPLICATIONS

- Industrial & Boiler Water Treatment:** Acts as an essential pH regulator and acid control agent to prevent scaling, pitting, and boiler tube corrosion in high-pressure steam water systems.
- Metal Surface Pre-Treatment:** Used in acid cleaning formulations, phosphatizing baths, and electroplating processes for metal surface rust control and coating preparation.
- Detergents & Chemical Cleaning:** Functions as an acid-buffered builder in specialized industrial descaling products, metal brighteners, and institutional cleaning compounds.
- Textile & Dyeing Industry:** Serves as an acidic pH buffer in textile dyeing baths to optimize dye penetration and dye-bath stabilization.
- Animal Feed & Fertilizer Additives:** Acts as a bioavailable source of phosphorus and sodium in mineral feed supplements and liquid specialty fertilizers.
- Food & Pharmaceutical Formulations:** Utilized as an acidity regulator, leavening acid component, sequestrant, and nutritional