



ELRASA - STPPI™ (Sodium Tripolyphosphate)

Technical Datasheet

1. Technical Datasheet

Property	Specification
Physical Properties	
Appearance	White, granular or powdered solid
Physical Form	Powder
Odor	Odorless
Molecular Weight (g/mol)	367.86
Density or Specific Gravity	2.52 g/cm ³
Refractive Index	1.658
pH (if aqueous solution)	1% soln @ 25 °C = 9.7-9.8
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pH	1% soln @ 25 °C = 9.7-9.8
Chemical Properties	
Water Solubility	20 g/100 mL (20 °C)
Thermal Properties	
Melting Point	622 °C
Solvent	
Water	14.5-20% (25°C)
Ethanol	<0.01% (insoluble)
Oils	<0.01% (insoluble)
Diethyl ether	<0.01% (insoluble)

2. Processing Methods



Hair Shampoo

STPP should be added to the water phase under stirring at room temperature or up to 40°C to ensure full dissolution before surfactants or thickeners are introduced. STPP works best and remains stable in slightly acidic to neutral pH.

Key Ingredients	Indicative Dosage (% w/w)
Water	65%
Sodium Laureth Sulfate	15%
Cocamidopropyl Betaine	5%
Glycerin	3%
Sodium Tripolyphosphate	3%
Polyquaternium-7	1%
Citric Acid	0.2%
Methylisothiazolinone + Methylchlorisothiazolinone	0.1%
Fragrance	0.7%

Laundry Detergent

For liquid detergents, it should be pre-dissolved in water before adding to the mix to avoid clumping. STPP works best in alkaline pH (9-10.5). Ensure the final formulation maintains this pH range for effective soil suspension and preventing redeposition on fabrics.

Key Ingredients	Indicative Dosage (% w/w)
Water	39.73%
Triethylenetetramine-N,N,N',N''-penta(methylene phosphonic acid)	3.3%
Sodium Hydroxide Solution	3.3%
Sodium Tripolyphosphate	3.3%
Sodium C12-14 Alcohol Ether Sulfate	9%
Cocamidopropyl Betaine	1.3%
Alcohol Ethoxylate (C12-C15)	2%
Alkyl Amphocarboxyglycinate	4%
Optical Brightener	0.2%
Perfume	0.2%
Opacifier (e.g., styrene/acrylic dispersion)	0.067%
Enzymes, carriers, etc.	0.135%



Surface Cleaner

Incorporate STPP into the water phase early in the process and ensure it is fully dissolved before adding surfactants, to avoid precipitation or uneven distribution. STPP pairs well with surfactants like SLS, LAS, or alcohol ethoxylates, improving foam stability, detergency, and stain removal.

Key Ingredients	Indicative Dosage (% w/w)
Water	60%
Sodium Tripolyphosphate	15%
Sodium Xylene Sulfonate	5%
Nonylphenol Ethoxylate	10%
Sodium Lauryl Sulfate	5%
Cellulose Microparticles	3%
Propylene Glycol	2%
Butyl Glycol (co-solvent)	2%
Preservative(s) & Fragrance	1%

3. Dosing by Application

Products	Authorized dosage %
Laundry & Dishwashing Detergents	15-35%
Industrial/Household Cleaners	5-30%

The information and data contained herein are believed to be accurate but may not be all inclusive and should only be used as a guide. The information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the product for his particular use and on condition that they assume the risk of the use thereof.

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