Shijiazhuang City Xinsheng Chemical Co., Ltd
Tel: 15232160175 Website: www.sjzxschem.com Address: No. 8 Changan Road, Xinle Economic Development Zone

ALUMINUM TRIPOLYPHOSPHATE SERIES

Technical Data Sheet

Item	Information
Chemical name	Aluminum tripolyphosphate; modified aluminum tripolyphosphate; aluminum dihydrogen tripolyphosphate (ATP)
Formula	AlH2P3O10
Anti-rust active group	P3O10 5-
CAS No.	13939-25-8
EINECS No.	237-714-9
Physical properties	Non-toxic, odorless white powder. Slightly soluble in water; soluble in nitric acid and hydrochloric acid. Non-volatile and non-irritating to skin under normal handling. Density 2.0-3.0 g/cm3. Contains no chromium or other harmful heavy metals. Good adhesion, impact resistance and strong heat resistance (about 1000 deg C; melting point about 1500 deg C).

Applications

Aluminum tripolyphosphate series products are ideal replacements for toxic anti-rust materials containing lead and chromium. Their rust-preventive performance is superior to red lead and zinc chrome yellow pigments.

The pigment is widely used in primers and one-coat anti-corrosion coatings. It has good affinity with varnish and can be used with various pigments, fillers and anti-rust pigments to prepare high-performance anti-corrosion coatings.

It is suitable for solvent-based coatings such as phenolic resin, alkyd resin, epoxy resin, epoxy polyester and acrylic resin, and for various water-based resin coatings. It can also be used in high-build coatings, powder coatings, organic titanium anti-corrosion coatings, rust-converting coatings, asphalt paint, zinc-rich primers, fireproof coatings and heat-resistant coatings.

Special note: aluminum tripolyphosphate is used in oil-based paints; modified aluminum tripolyphosphate performs better in water-based paints. Aluminum dihydrogen tripolyphosphate is a pure, low-heavy-metal pigment suitable for oil-based and water-based paints and high-temperature materials.

Anti-rust Principle

Aluminum tripolyphosphate coatings have good anti-corrosion performance. After full immersion, the coating shows no rusting, blistering, cracking or peeling. Compared with epoxy anti-rust coatings, the studied coatings show better self-healing and corrosion resistance. When water penetrates the coating, phosphate anions are released and form a protective layer on the metal substrate, preventing water ingress and corrosion reactions.

Packaging and Storage

Packed in woven bags or composite kraft paper bags with inner liners, net weight 25 kg per bag. Avoid package damage, moisture, contamination and contact with acids.

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TECHNICAL PARAMETERS OF ALUMINUM TRIPOLYPHOSPHATE

Test item	MY-O	ATP	MY-1	MY-2	APW-1	APW-2
Whiteness (%)	85-90	>=90	85-95	>=90	>=90	>=90
P2O5 (%)	30-40	60-70	30-40	48-52	42-46	35-40
Al2O3 (%)	10-20	20-30	13-20	11-15	11-15	9.5-13.5
SiO2 (%)	10-15	--	10-15	--	13-17	11-15.5
ZnO (%)	--	--	15-25	18-22	15-18	25-30