

Polymer Add (Thailand) Co.,Ltd.

Office - 106, Chalarempriakiat, Lor 9, Soi 22, Yak 5, Nongbon, Prawet, Bangkok, Thailand 10250

Factory - 188/3, Moo 8, Tambon Bangpu Mai, Amphoe Muang Samut Prakan, Samutprakan, Thailand 10280

Mobile - Thai : 0804531391, English: 0839415475, E-mail – contact@polymeradd.co.th



TECHNICAL DATA SHEET

TRICALCIUM PHOSPHATE MICRONISED

Product Identification

Property	Information
Product name	Micronised Tricalcium Phosphate
Product code	TCP-EPS
Chemical name	Tricalcium Phosphate
Chemical formula	$\text{Ca}_3(\text{PO}_4)_2$
CAS number	7758-87-4
Molecular weight	310.18 g/mol
Product form	Micronised white powder
Application	Suspension stabilizer for Expandable Polystyrene

Product Description

TCP-EPS is a micronised grade of Tricalcium Phosphate developed for use as an inorganic suspension stabilizer in the aqueous suspension polymerization of Expandable Polystyrene.

During polymerization, the finely divided TCP particles accumulate at the styrene–water interface and help stabilize the dispersed monomer droplets. This reduces droplet coalescence and supports the formation of controlled EPS beads.

The controlled particle-size distribution provides more uniform aqueous dispersion and interfacial coverage than conventional coarse TCP powder.

Principal Application

Suspension stabilizer in Expandable Polystyrene production

TCP-EPS is used to:

- Stabilize styrene droplets in the aqueous phase.
- Reduce droplet coalescence during polymerization.
- Support controlled EPS bead formation.
- Improve EPS bead-size distribution.
- Reduce oversized and agglomerated beads.
- Improve batch-to-batch process consistency.
- Permit removal or reduction of residual calcium phosphate by controlled acid washing.

The final EPS bead size also depends on TCP concentration, agitation speed, reactor geometry, temperature profile, water-to-monomer ratio and the auxiliary suspension-stabilizer system.

Polymer Add (Thailand) Co.,Ltd.

Office - 106, Chalarempriakiat, Lor 9, Soi 22, Yak 5, Nongbon, Prawet, Bangkok, Thailand 10250

Factory - 188/3, Moo 8, Tambon Bangpu Mai, Amphoe Muang Samut Prakan, Samutprakan, Thailand 10280

Mobile - Thai : 0804531391, English: 0839415475, E-mail – contact@polymeradd.co.th



Advantages of the Micronised Grade

- Greater effective surface area.
- Faster and more uniform aqueous dispersion.
- Improved coverage of the styrene–water interface.
- Better control of coarse particles and agglomerates.
- More consistent suspension stability.
- More reproducible EPS bead-size distribution.

Specification

Property	Specification
Appearance	White, free-flowing powder
Moisture	≤1.0%
pH, 10% aqueous slurry	6.5–8.5
CaO/P ₂ O ₅ weight ratio	0.90–1.45
Particle size, D50	1–3 µm
Particle size, D90	≤5 µm
Particle size, D97	≤8 µm
Particle size, D99	≤10 µm
Maximum particle size, D100	≤20 µm
Conductivity, 10% aqueous slurry	150–10,000 µS/cm
Half-settling time, 1.5% aqueous slurry	5–20 minutes

Test Method

Particle-size distribution is measured by laser diffraction using a controlled wet-dispersion method.

The sample-preparation conditions, dispersion medium, ultrasonic treatment and instrument settings must remain consistent for production-quality control.

Processing Guidance

- Pre-disperse TCP-EPS uniformly in the aqueous phase.
- Maintain effective agitation during addition.
- Avoid introducing compacted dry powder directly into the reactor.
- Use consistent water quality and dispersion conditions.
- Optimize the TCP concentration according to the required EPS bead size.
- Confirm compatibility with the selected auxiliary surfactant or suspension stabilizer.
- Establish appropriate acid-washing conditions for the finished EPS beads.

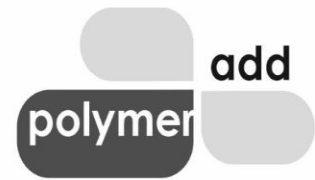
The optimum dosage must be determined in the customer's polymerization system.

Polymer Add (Thailand) Co.,Ltd.

Office - 106, Chalaremprikat, Lor 9, Soi 22, Yak 5, Nongbon, Prawet, Bangkok, Thailand 10250

Factory - 188/3, Moo 8, Tambon Bangpu Mai, Amphoe Muang Samut Prakan, Samutprakan, Thailand 10280

Mobile - Thai : 0804531391, English: 0839415475, E-mail – contact@polymeradd.co.th



Packaging

- 20 kg or 25 kg net in polyethylene-lined bags.
- Alternative packaging is available upon request.

Storage

Store in the original sealed packaging in a cool, dry and well-ventilated area.

Protect the product from moisture, direct sunlight, contamination and damaged packaging. Avoid generating airborne dust during handling.

Shelf Life

Twenty-four months from the manufacturing date when stored in unopened original packaging under the recommended conditions.

Regulatory Status

TCP-EPS is an industrial process grade intended for polymer-manufacturing applications. It is not offered as a food, pharmaceutical or nutritional grade.

Disclaimer

The information in this document is provided as technical guidance. The customer is responsible for determining the appropriate dosage, processing conditions and suitability of the product in its formulation and production equipment.