

Polymer Add (Thailand) Co.,Ltd.

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TECHNICAL DATA SHEET (TDS)

PENTAERYTHRITOL TETRABENZOATE (PETB)

1. Product Identification

Item	Details
Chemical Name	Pentaerythritol Tetrabenzoate
Synonyms	PETB; Pentaerythritol tetrakis(benzoate)
CAS No.	4196-89-0
Molecular Formula	$C_{33}H_{28}O_8$
Molecular Weight	~552.55 g/mol
Product Form	Micronized solid powder

2. Product Description

Pentaerythritol Tetrabenzoate is a high-melting aromatic benzoate ester supplied in micronised solid form for polymer compounding and formulation.

In polymer systems, PETB functions as a solid plasticizer and permanent internal modifier, providing low volatility, low migration, and long-term performance retention in demanding thermoplastic and composite applications. Its tetra-functional benzoate structure enables controlled flexibility while maintaining dimensional and thermal stability at elevated processing temperatures.

3. Typical Physical Properties

Property	Typical Value
Appearance	White to off-white solid / powder
Odour	Odourless (typical)
Melting / Softening Point	High-melting solid (typically >120 °C)
Bulk Density	0.40 – 0.70 g/cm ³ (typical for micronised solids)
Solubility in Water	Insoluble (typical)
Solubility in Organic Solvents	Limited / soluble in aromatic-type solvents (typical)
Thermal Behaviour	Stable under polymer processing conditions (typical)

Values are typical and not intended as specifications.

4. Particle Size Characteristics (Micronized Grade)

Parameter	Typical Range
D50	10 – 25 µm
D90	< 35 µm
D100	< 45 µm

Micronisation supports **uniform dispersion** and **consistent functional performance** in polymer matrices.

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5. Primary Applications

Application Area	Function
Engineering Thermoplastics	Solid plasticizer / permanent internal modifier
High-Temperature Polymer Compounds	Low-volatility flexibility modifier
Polymer–Paper & Polymer–Fiber Composites	Interfacial stability and stress distribution
Filled & Mineral-Loaded Systems	Brittleness reduction and dimensional control
Specialty Polymer Blends	Long-term plasticization with low migration

6. Processing & Handling

- Suitable for dry blending and masterbatch preparation
- Compatible with standard compounding and extrusion equipment
- Best incorporated during high-shear mixing or melt compounding

7. Storage & Shelf Life

Item	Recommendation
Storage	Cool, dry, well-ventilated area
Container	Keep tightly closed
Shelf Life	24 months under recommended conditions

8. Packaging

- 20–25 kg bags
- Other packaging available on request

9. Regulatory & Compliance (Indicative)

- Intended for industrial use
- Detailed regulatory status available upon request

10. Disclaimer

The information provided is based on typical data and experience and is intended for guidance in formulation development. Users should conduct their own evaluations to determine suitability for their specific applications.