

Polymer Add (Thailand) Co.,Ltd.

Office - 106, Chalarempriyat, 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 (TDS)

PENTAERYTHRITOL TETRABENZOATE (PETB)

1. Product Identification

| Item | Details |
|-------------------|--|
| Chemical Name | Pentaerythritol Tetrabenoate |
| 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 Tetrabenoate 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.

Polymer Add (Thailand) Co.,Ltd.

Office - 106, Chalarempriyat, 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



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.