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TECHNICAL DATA SHEET (TDS)

ANTIMONY TRIBENZOATE – MICRONISED

Solid & High-Melting Plasticizer / Permanent Internal Modifier

1. Product Identification

Item	Details
Chemical Name	Antimony Tribenzoate
Synonyms	Antimony tris(benzoate)
CAS No.	1420-03-1
Molecular Formula	$Sb(C_6H_5COO)_3$
Molecular Weight	~535.25 g/mol
Product Form	Micronised solid powder

2. Product Description

Antimony Tribenzoate is a high-melting metal-organic benzoate compound supplied in micronised, free-flowing powder form for use as a solid plasticizer and permanent internal modifier in thermoplastic and composite systems.

Unlike liquid plasticizers, Antimony Tribenzoate functions through coordination bonding and internal structural interaction within the polymer matrix, delivering controlled flexibility, dimensional stability, and long-term permanence with very low volatility and migration.

Its aromatic benzoate ligands combined with antimony coordination provide thermal robustness, making the material suitable for high-temperature processing, filled formulations, and applications requiring mechanical property retention over extended service life.

3. Typical Physical Properties

Property	Typical Value
Appearance	White to off-white solid / powder
Odour	Odourless (typical)
Melting / Decomposition Range	Approx. 280 – 320 °C
Bulk Density	0.35 – 0.65 g/cm^3 (typical, micronised)
Solubility in Water	Insoluble
Solubility in Organic Solvents	Insoluble / very limited
Thermal Behaviour	Stable under polymer processing conditions

Values shown are typical and are not intended as product specifications.

4. Particle Size Characteristics (Micronised Grade)

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

Micronisation enables uniform dispersion, predictable melt incorporation, and consistent functional performance across polymer matrices.

5. Primary Applications

Application Area	Functional Role
Engineering Thermoplastics	Solid plasticization with thermal stability
High-Temperature Polymer Compounds	Permanent flexibility retention
Filled & Mineral-Loaded Systems	Stress redistribution and brittleness reduction
Polymer–Paper & Polymer–Fiber Composites	Interfacial stability and dimensional control
Specialty Polymer Blends	Low-migration internal modifier

6. Processing & Handling

Aspect	Recommendation
Processing Route	Dry blending, masterbatching, or direct compounding
Equipment Compatibility	Standard extrusion and compounding equipment
Incorporation Point	Preferably during high-shear mixing or melt compounding
Dispersion	Enhanced by micronised particle size

7. Storage & Shelf Life

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

8. Packaging

Packaging Type	Details
Standard Packaging	20–25 kg bags
Alternative Packaging	Available upon request

9. Regulatory & Compliance (Indicative)

Item	Description
Intended Use	Industrial polymer processing only
Food / Medical Use	Not intended
Regulatory Status	Varies by jurisdiction; documentation available upon request

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10. Disclaimer

The information provided in this Technical Data Sheet 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 and processing conditions.