

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

ANTIOXIDANT 168

PRODUCT CLASSIFICATION

Item	Description
Chemical Name	Tris(2,4-di-tert-butylphenyl) phosphite
Product Name	Antioxidant 168
CAS No.	31570-04-4
EC No.	250-709-6
Molecular Formula	$C_{42}H_{63}O_3P$
Molecular Weight	646.92 g/mol
Chemical Class	Organophosphite secondary antioxidant
Synonyms	AO 168; Phosphite Antioxidant 168; Tris(2,4-di-tert-butylphenyl) phosphite

PHYSICAL AND CHEMICAL PROPERTIES

Property	Specification	Test Method
Appearance	White powder	Visual
Purity	$\geq 99.0\%$	Chromatographic method
Melting Point	183–187°C	Melting-point determination
Acid Value	≤ 0.3 mg KOH/g	Titration
Moisture	$\leq 0.3\%$	Moisture determination
Ash Content	$\leq 0.15\%$	Gravimetric method
2,4-Di-tert-butylphenol	$\leq 0.2\%$	Chromatographic method
Clarity of Solution	Clear solution	Visual
Solubility in Water	Practically insoluble	General reference
Product Form	Solid powder	Visual

FUNCTION AND PERFORMANCE

Antioxidant 168 is a phosphite-based secondary antioxidant used primarily as a processing stabiliser in polymers. It decomposes hydroperoxides generated during polymer processing and helps reduce thermal and oxidative degradation.

It is commonly combined with hindered phenolic primary antioxidants such as Antioxidant 1010, Antioxidant 1076 or Antioxidant 1098. The combination provides improved processing stability and longer-term protection compared with using either antioxidant type alone.

USES AND APPLICATIONS

Industry	Commercial Application and Use
Polypropylene	Processing stabiliser for extrusion, injection moulding, fibres and compounded PP
Polyethylene	Protects LDPE, LLDPE and HDPE against thermal oxidation during processing

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PVC	Processing stabiliser used in suitable rigid and flexible PVC formulations
Elastomers	Helps limit oxidative degradation during compounding and processing
Adhesives and Sealants	Improves thermal stability during manufacturing and application
Coatings	Used in suitable polymeric coating and resin systems requiring processing stability

PRINCIPAL BENEFITS

- Effective hydroperoxide decomposer and secondary antioxidant
- Protects polymers during high-temperature processing
- Helps reduce colour formation and polymer degradation
- Helps maintain melt-flow and mechanical properties
- Provides synergistic performance with hindered phenolic antioxidants
- Suitable for use in a broad range of thermoplastic polymers
- Useful in polymer systems undergoing repeated heat-processing cycles

STORAGE AND HANDLING

Store in the original, tightly closed packaging in a cool, dry and well-ventilated area. Protect the product from moisture, excessive heat and direct sunlight.

Avoid prolonged exposure to humid conditions because organophosphite antioxidants can gradually hydrolyse when exposed to moisture. Prevent dust generation and use suitable personal protective equipment during handling.

PACKAGING

Standard commercial packaging: 25 kg net bag.

Alternative packaging may be available subject to agreement and minimum order quantity.

REGULATORY INFORMATION

The regulatory suitability of Antioxidant 168 depends on the polymer, concentration, manufacturing conditions, intended application and country of sale.

For food-contact plastic applications, compliance with applicable compositional restrictions, specific migration limits and conditions of use must be confirmed using current supplier declarations and relevant regional regulations.

Regulatory approval for one application or region does not automatically establish compliance for another application or market.

DISCLAIMER

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This product is intended for industrial use in polymer, coating, adhesive, elastomer and specialty chemical applications. It is not recommended for pharmaceutical or direct food use unless separately certified.

The values shown are based on the supplied Certificate of Analysis and general technical information. They are provided for guidance and do not constitute a binding sales specification unless expressly confirmed in writing.

Month of Creation: September 2026

Month of Review: September 2028

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