

# Irganox<sup>®</sup> 1010

## Product description

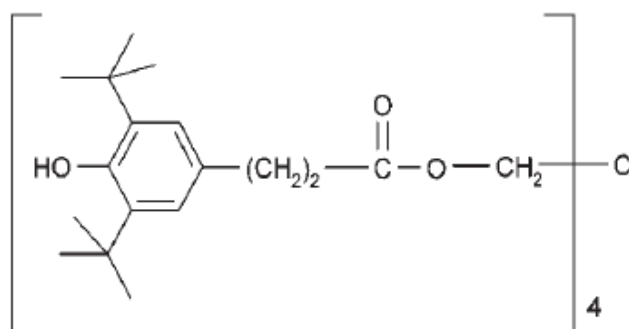
Irganox<sup>®</sup> 1010 is a versatile, highly effective, primary phenolic antioxidant for organic substrates such as coatings, plastics, elastomers, adhesives, waxes. It protects these substrates against thermo-oxidative degradation.

## Key benefits

- Non-discoloring
- Odorless
- High resistance to extraction, low volatility and good compatibility
- Excellent efficiency due to high content of phenolic moieties
- Can be used in combination with other additives such as co-stabilizers, light stabilizers and other functional stabilizers (e.g. HALS)
- Synergy is observed when used in combination with secondary antioxidants (peroxide decomposers) such as phosphites (Irgafos<sup>®</sup> 168, Irgafos<sup>®</sup> 126) or thioethers (Irganox<sup>®</sup> PS 800, Irganox<sup>®</sup> PS 802)

## Chemical nature

Pentaerythritol tetrakis (3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate)



Molecular weight: 1178 g/mol, CAS No. 6683-19-8

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## Properties

<b>Physical form</b>	Irganox® 1010	white, free-flowing powder
	Irganox® 1010 FF	white, free-flowing granules
	Irganox® 1010 ED	white to slightly yellowish pellets

<b>Technical data</b> (no supply specification)	Melting range	110 – 125 °C
	Flashpoint	297 °C
	Vapor pressure (20 °C)	7 E – 10 Pa (extrapolated)
	Density (20 °C)	1.12 g/cm <sup>3</sup>

**Bulk density:**

Irganox® 1010 Powder	530 – 630 g/l
Irganox® 1010 FF	480 – 570 g/l
Irganox® 1010 ED	500 – 600 g/l

<b>Solubility (20 °C)</b>	<b>g / 100 g solution</b>
Wasser	< 0.1 %
Butanol	3 %
Methoxypropanol	10 %
Butyldiglycol	10 %
Butylacetate	40 %
Butylglycolacetate	30 %
Methoxypropylacetate (MPA)	30 %
Methylethylketone	50 %
Solvesso 100	25 %
Xylene	40 %

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## Application

Irganox® 1010 can be used in coatings exposed to high temperatures during processing (e.g. extrusion), during their bake cycle and/or their service life. Examples include powder or coil coatings, where Irganox® 1010 can prevent thermally induced oxidation thus helping to reduce bake and overbake discoloration (especially in white and pastel tones).

NOTE: phenolic antioxidants such as Irganox® 1010 cannot be used in direct gas fired ovens due to interaction with NOx resulting in strong discoloration.

## Guideline for use

For coating applications requiring long-term thermal stabilization the recommended concentration range is 0.5 – 1 % (based on total solids of the formulation).

In systems where polymers are already prone to oxidation during processing, the performance can be further improved in synergistic combinations with phosphites (Irgafos® range).

For long-term UV protection along with thermal stabilization the antioxidant(s) need to be used in combination with light stabilizers (clear coats: UV absorber and HALS; pigmented systems: HALS or UV absorber/HALS depending on pigmentation level).

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## Storage

Irganox® 1010 shall be stored in its tightly sealed original packaging at temperatures between 5 °C and 40 °C.

## Safety

When handling this product, please comply with the advice and information given in the safety data sheet and observe protective and workplace hygiene measures adequate for handling chemicals.

## Note

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights, etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. The agreed contractual quality of the product results exclusively from the statements made in the product specification. It is the responsibility of the recipient of our product to ensure that any proprietary rights and existing laws and legislation are observed.

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