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Tinuvin[®] 360

Very Low Volatile Benzotriazole UV Absorber

Characterization

Tinuvin 360 is a very low volatile ultraviolet light absorber (UVA) of the hydroxyphenyl benzotriazole class, imparting outstanding light stability to a variety of polymers.

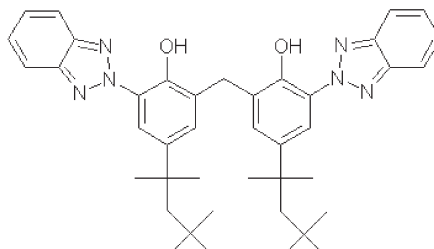
Chemical name

Phenol, 2,2'-methylene-bis(6-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl))

CAS number

103597-45-1

Chemical formula



Molecular weight

659 g/mol

Applications

Tinuvin 360 applications include acrylic resins, polyalkylene terephthalates, polycarbonates, modified polyphenylene ether or sulfide compounds, polyamides, polyacetals, styrenics, elastomers and various high performance plastics.

Features/benefits

Tinuvin 360 is particularly suitable for processing and aging conditions where high loads, very low volatility and good compatibility are required. The specific objective is to achieve high UV screen performance and minimize sublimation through vents as well as prevention of deposits on molds, chill rolls or calibrators.

Such requirements are especially critical for complex moldings, fibers, sheets, twin wall sheets, thin films and laminated or co-extruded semi-finished articles.

Depending on equipment, processing conditions, and polymer types, Tinuvin 360 allows direct two-layer co-extrusion of sheets without the use of a neutral third top layer to prevent sublimation and/or deposits generated by the thin, highly UVA-loaded second layer.

Product forms

Tinuvin 360	slightly yellow powder
Tinuvin 360 ED	slightly yellow, free-flowing granules

Guidelines for use

Tinuvin 360 (0.2–10% by weight) can be readily incorporated in the polymer by using conventional techniques such as powder, solution, or melt blending (e.g. extrusion compounding). Tinuvin 360 can be used alone or in combination with other functional additives such as antioxidants (hindered phenols, phosphites) and HALS light stabilizers, where often a synergistic performance is observed. Extensive performance data of Tinuvin 360 are available in many of the substrates listed above.

Physical Properties

Melting Point	195 °C
Flashpoint	>200 °C
Density (20 °C)	1.2 g/ml
Vapor Pressure (25 °C)	6 E-13 Pa

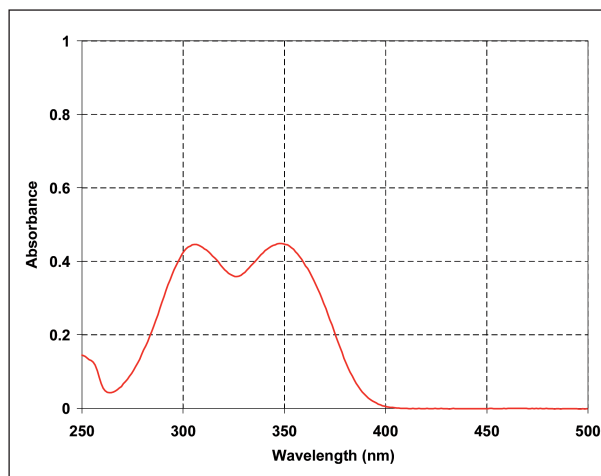
Solubility (20 °C)	g/100 g solution
Acetone	<0.01
Chloroform	10
Ethanol	<0.01
Ethyl acetate	<0.01
n-Hexane	<0.01
Methylene chloride	7.5
Water	<0.001

Volatility (pure substance; TGA, heating rate 20 °C/min in air)

Weight loss %	Temperature °C
1.0	333
2.0	350

Absorbance spectrum

(10 mg/l, Chloroform)



Tinuvin 360 exhibits strong absorbance in the 300–400 nm region and minimal absorbance in the visible region (>400 nm) of the spectrum. The absorption maxima are at 308 nm and 349 nm ($\epsilon = 31'895$ l/mol·cm) in chloroform solution.

Handling & Safety

Tinuvin 360 exhibits a very low order of oral toxicity and does not present any abnormal problems in its handling or general use.

Detailed information on handling and any precautions to be observed in the use of the product(s) described in this leaflet can be found in our relevant health and safety information sheet.

Note

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