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Tinuvin® 1577

Low volatile hydroxyphenyl triazine UV absorber

Characterization

Tinuvin 1577 is an ultraviolet light absorber (UVA) of the hydroxyphenyl triazine class exhibiting very low volatility and good compatibility with a variety of polymers, co-additives and resin compositions. Tinuvin 1577 allows polycarbonates and polyesters to achieve a higher resistance to weathering than conventional benzotriazole UV absorbers.

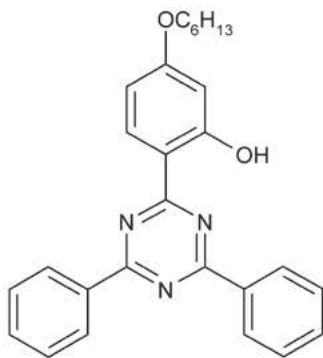
Chemical name

Phenol, 2-(4,6-Diphenyl-1,3,5-triazin-2-yl)-5-hexyloxy

CAS number

147315-50-2

Chemical formula



Molecular weight

425 g/mol

Applications

Tinuvin 1577 applications include polyalkene terephthalates and naphthalates, linear and branched polycarbonates, modified polyphenylene ether compounds, and various high performance plastics.

The use of Tinuvin 1577 is indicated in polymer blends & alloys, such as PC/ABS, PC/PBT, PPE/IPS, PPE/PA and copolymers as well as in reinforced, filled and/or flame retarded compounds, which can be transparent, translucent and/or pigmented. Its very low tendency to chelate allows Tinuvin 1577 formulations in polymers containing catalyst residues.

Features/benefits

Tinuvin 1577 is particularly suitable for processing and aging conditions where high loadings, low volatility and good compatibility are required. Such requirements are especially critical for complex moldings, fibers, plain and corrugated sheets, thin films, co-injected or co-extruded semi-finished parts.

Depending on equipment, processing conditions, and polymer types, Tinuvin 1577 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 cap layer. Moreover, its very high UV screen activity allows the use of lower concentrations than with traditional UV absorbers. This may be of particular importance when using Tinuvin 1577 in high concentration applications.

Product forms

Tinuvin 1577 ED yellowish, free-flowing granules

Guidelines for use

Tinuvin 1577 (0.2–6 % by weight) can be readily incorporated into the polymer by using conventional techniques, e.g. powder, solution, or melt blending. Tinuvin 1577 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 are available in many of the substrates listed above.

Physical Properties

Melting Point	148 °C
Flashpoint	not applicable
Vapor Pressure (25 °C)	9 E-10 Pa
Specific gravity (at 20 °C)	1.10 g/ml
Bulk density	0.58 g/ml
Angle of repose	36 °

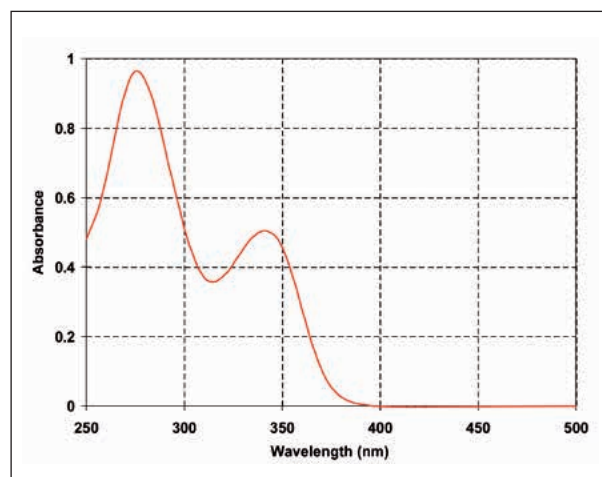
Solubility (20 °C)	g/100 g solution
Acetone	0.3
Chloroform	25
Ethanol	0.02
Ethyl acetate	0.7
n-Hexane	0.07
Methylene chloride	17
Toluene	5

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

Weight Loss %	Temperature °C
1.0	300
5.0	335
10.0	353

Absorbance spectrum

(10 mg/l, Chloroform)



Tinuvin 1577 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 274 nm and 341 nm ($\epsilon = 22'000 \text{ l/mol}\cdot\text{cm}$) in chloroform solution.

Handling & Safety

Tinuvin 1577 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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