BASF
The Chemical Company

® = registered Trademark of Ciba Holding Inc.

Tinuvin® 234

Low Volatile Benzotriazole UV Absorber

Characterization

Tinuvin 234 is a high molecular weight ultraviolet light absorber (UVA) of the hydroxyphenyl benzotriazole class, imparting excellent light stability to a variety of polymers.

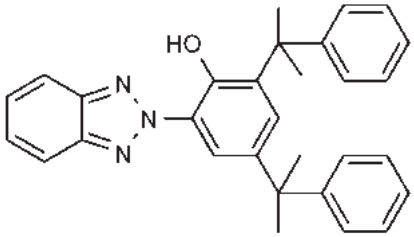
Chemical name

Phenol, 2-(2H-benzotriazol-2-yl)-4,6-bis(1-methyl-1-phenylethyl)

CAS number

70321-86-7

Chemical formula



Molecular weight

448 g/mol

Applications

Tinuvin 234 is highly effective for polymers processed at high temperatures such as polycarbonates, polyalkylene terephthalates, polyacetals, polyamides, polyphenylene sulfide, polyphenylene oxide, aromatic copolymers, thermoplastic polyurethane and polyurethane fibers, as well as for polyvinylchloride, styrene homo- and copolymers. Applications include molded articles, films, sheets and fibers.

Features/benefits

Tinuvin 234 features low volatility, exceptional light absorbing characteristics and good compatibility in various substrates. This makes the product particularly suitable for applications characterized by high surface area, such as films and fibers.

Product forms

Tinuvin 234	Slightly yellow powder
Tinuvin 234 FF	Slightly yellow granules

Guidelines for use

Use levels of Tinuvin 234 range between 0.15 and 0.60 %, depending on substrate and performance requirements of the final application. Tinuvin 234 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 234 alone or in combination with other additives are available in many of the substrates listed above.

Physical Properties

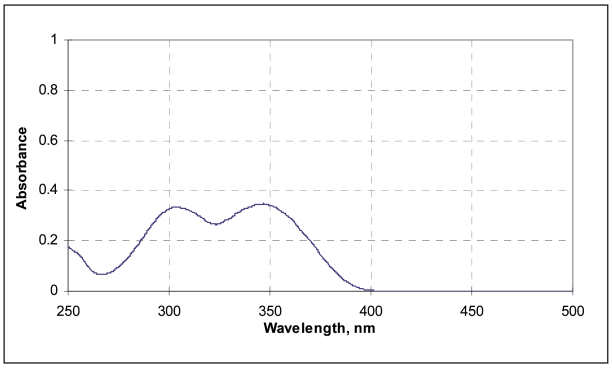
Melting Range	137 – 141 °C
Flashpoint	> 150 °C
Specific Gravity (20 °C)	1.22 g/ml
Vapor Pressure (20 °C)	~ 2 E-10 Pa

Solubility (20 °C)	**g/100 g solution**
Acetone	2
Chloroform	35
Cyclohexane	5
Ethanol	0.3
Ethyl acetate	4
n-Hexane	0.6
Methanol	< 0.1
Methylene chloride	34
Toluene	20
Water	< 0.01

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

Weight Loss %	Temperature °C
1.0	264
2.0	280
5.0	302

Absorbance spectrum
(10 mg/l, Chloroform)



Tinuvin 234 exhibits high absorbance in the 300 – 400 nm region and minimal absorbance in the visible region (> 400 nm) of the spectrum. The absorption maxima are at 302 nm and 343 nm (ε = 16'100 l/mol · cm) in chloroform solution.

Handling & Safety

Tinuvin 234 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

August 2010

BASF Schweiz AG
Performance Chemicals/Plastic Additives
Klybeckstrasse 141
4057 Basel, Switzerland