

® = registered trademark of BASF SE

Tinuvin® 312

Oxanilide UV absorber

Characterization

Tinuvin 312 is an ultraviolet light absorber (UVA) of the oxanilide class, which imparts outstanding light stability to plastics and other organic substrates. Tinuvin 312 is recommend for rigid and flexible PVC and polyesters.

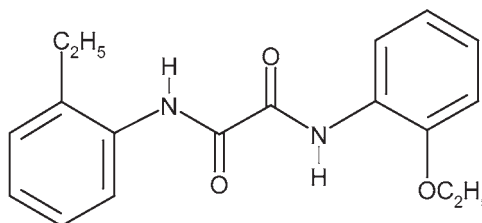
Chemical name

Ethanediamide, N-(2-ethoxyphenyl)-N'-(2-ethylphenyl)

CAS number

23949-66-8

Chemical formula



Molecular weight

312 g/mol

Applications

Tinuvin 312 is a highly effective light stabilizer for a variety of plastics and other organic substrates including unsaturated polyesters, PVC and PVC plastisol.

Tinuvin 312 can also be used in polyurethanes, polyamides, polymethylmethacrylate, polybutyleneterephthalate, polycarbonates and cellulose esters.

Features/benefits

Tinuvin 312 features strong UV absorption, excellent compatibility in a wide variety of substrates, and low volatility. It protects polymers as well as organic pigments from UV radiation, helping to preserve the original appearance and physical integrity of molded articles, films, sheets, and fibers during outdoor weathering.

Benefits:

- white product; no impact on color and transparency of the substrate
- low volatile and thermally stable
- excellent chemical resistance; no reactivity with alkalines
- imparts additional thermal stability to polyamides
- low wavelength absorbance; can be combined with optical brighteners

Product forms

white crystalline powder

Guidelines for use

The use levels of Tinuvin 312 range between 0.10 and 1.0%, depending on substrate and performance requirements of the final application. Tinuvin 312 can be used alone or in combination with other functional additives such as antioxidants (hindered phenols, phosphites) and HALS light stabilizers. Performance data of Tinuvin 312 alone or in combination with other additives are available in many of the substrates listed above.

Physical Properties

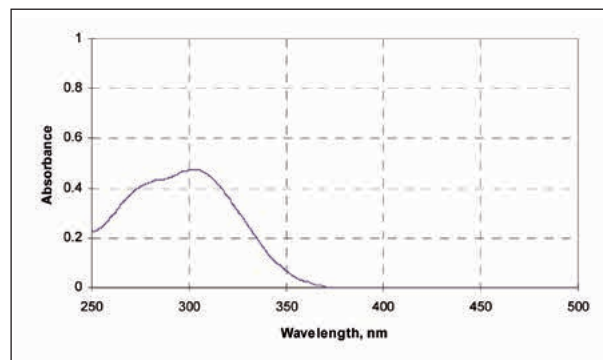
| | |
|--------------------------|------------|
| Melting Range | 124–127 °C |
| Specific Gravity (20 °C) | 1.26 g/ml |
| Vapor Pressure (20 °C) | 5.5 E-8 Pa |
| Boiling point | > 400 °C |
| pH-value | 5.4 |

| Solubility (20 °C) | g/100 g solution |
|---------------------------|-------------------------|
| Acetone | 4 |
| Benzene | 7 |
| Chloroform | 20 |
| Ethanol | 0.3 |
| n-Hexane | 0.2 |
| Methanol | 0.4 |
| Toluene | 5.5 |
| Water | <0.01 |

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

| Weight Loss % | Temperature °C |
|---------------|----------------|
| 1.0 | 200 |
| 2.0 | 215 |
| 5.0 | 235 |

Absorbance spectrum (10 mg/l, Chloroform)



Tinuvin 312 exhibits strong absorbance in the 250–350 nm region and no absorbance in the visible region (> 400 nm) of the spectrum. The absorption maximum is at 305 nm in chloroform solution.

Handling & Safety

Tinuvin 312 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

The descriptions, designs, data and information contained herein are presented in good faith, and are based on BASF's current knowledge and experience. They are provided for guidance only, and do not constitute the agreed contractual quality of the product or a part of BASF's terms and conditions of sale. Because many factors may affect processing or application/use of the product, BASF recommends that the reader carry out its own investigations and tests to determine the suitability of a product for its particular purpose prior to use. It is the responsibility of the recipient of product to ensure that any proprietary rights and existing laws and legislation are observed. No warranties of any kind, either expressed or implied, including, but not limited to, warranties of merchantability or fitness for a particular purpose, are made regarding products described or designs, data or information set forth herein, or that the products, descriptions, designs, data or information may be used without infringing the intellectual property rights of others. Any descriptions, designs, data and information given in this publication may change without prior information. The descriptions, designs, data and information furnished by BASF hereunder are given gratis and BASF assumes no obligation or liability for the descriptions, designs, data or information given or results obtained, all such being given and accepted at the reader's risk.

March 2011

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

