

Tinuvin® 171

UV absorber

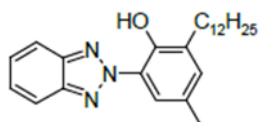
Product description

Tinuvin® 171 is a liquid benzotriazole-based UV absorber for printing and packaging, photographic and adhesives and sealants applications. It was designed to fulfill high performance and durability requirements of solvent-based, 100 % and reactive systems.

Key benefits

- Beneficial to a wide variety of chemical systems
- Medium level of long term performance (photo-permanence)
- No crystallization of the UV absorber in liquid photographic emulsion preparations during storage and after coating
- Broad spectral coverage
- Medium thermal stability

Chemical nature



Phenol, 2-(2H-benzotriazol-2-yl)-6-dodecyl-4-methyl-,

CAS number

125304-04-3

Molecular weight

395 g/mol

Properties

Physical form

Clear, viscous, slightly yellow to yellow liquid

Technical data

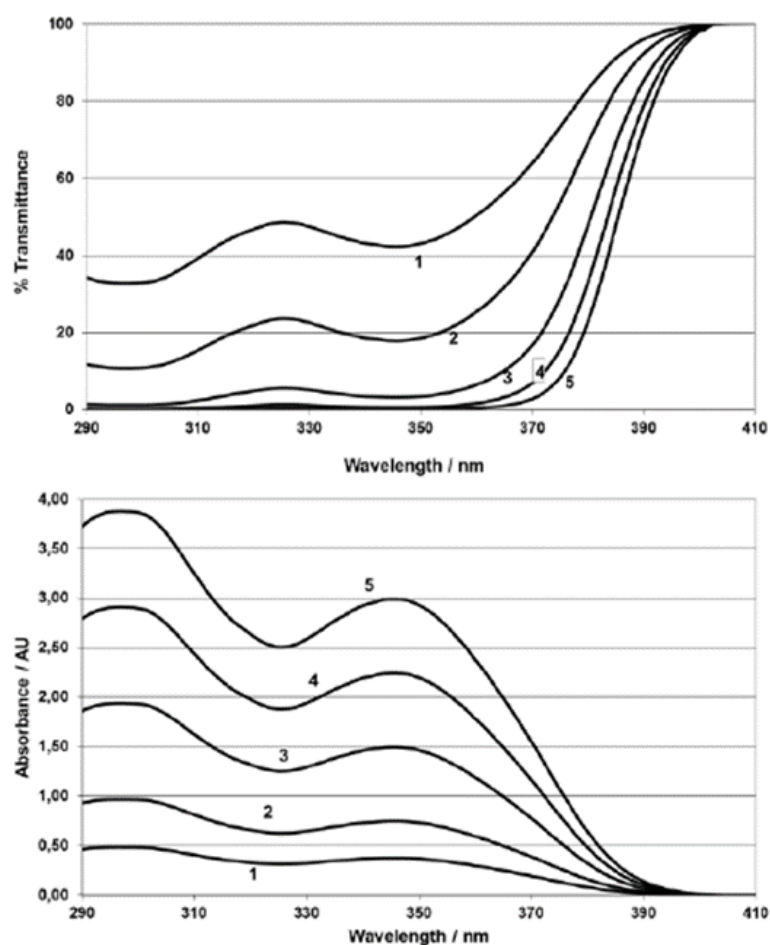
(not supply specification)

Viscosity, dynamic	DIN 53018/53019 (20 °C)	2.9 Pa.s
Density	DIN 51757 (20 °C)	0.99 – 1.03 g/cm ³
Flash point	DIN EN ISO 2719	246 - 250 °C

Miscibility

Miscible with most organic solvents and easy to incorporate in water-based systems by use of co-solvents

Spectral properties



legend

- | | |
|---|---|
| 1 | 10 mg/l (0.001 % $\approx$ 0.25 % active in 40 μ m) |
| 2 | 20 mg/l (0.002 % $\approx$ 0.50 % active in 40 μ m) |
| 3 | 40 mg/l (0.004 % $\approx$ 1.00 % active in 40 μ m) |
| 4 | 60 mg/l (0.006 % $\approx$ 1.50 % active in 40 μ m) |
| 5 | 80 mg/l (0.008 % $\approx$ 2.00 % active in 40 μ m) |

The theoretical concentration in an applied 40- μ m clear coat was calculated as a function of the concentration in toluene with the help of the Lambert-Beer law. Spectra were recorded in toluene, light path length = 1 cm.

Application

Fields of application The absorption spectrum of Tinuvin® 171 does not tail significantly into the visible region so it is an ideal UV absorber for those systems where initial yellowing must be kept to a minimum

- Repro and other photographic applications e.g. in non-silver imaging colour hard-copy
- Chromogenic colour papers to protect dyes and couplers from harmful UV light
- Adhesives and sealants

- Binder systems**
- 1K and 2K PUR (acrylic/NCO, PES/NCO, ...)
 - Thermoplastic (acrylic, vinylic, ...)
 - UV-curable systems (acrylic, PES, ...)

Recommended concentrations

The concentration of Tinuvin® 171 depends on the dry film thickness and on the desired degree of protection. The amount of Tinuvin® 171 required for optimum performance should be determined in trials covering a concentration range. Tinuvin® 171 can be combined with other liquid UV absorbers like Tinuvin® 109 or Tinuvin® 400 to achieve desired absorption characteristics.

Dry-film thickness	Concentration based on binder solids
10 – 20 µm	10.0 – 5.0 % by weight
20 – 40 µm	5.0 – 2.5 % by weight
40 – 60 µm	2.5 – 1.5 % by weight

In adhesive applications it can be used in combination with other functional additives like antioxidants e.g. Irganox® 1726 and HALS light stabilizers such as Tinuvin® 292. The concentration in adhesives and sealants ranges from 0.5 – 2.0 % depending on substrate and processing conditions.

Storage

When kept in original unopened containers and at temperatures of 5 – 35 °C.

Tinuvin® 171 can be stored for up to 3 years from the date of manufacture.

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.