Technical Information

Tinuvin® 970

	UV absorber
general	Tinuvin® 970 is a solid very red-shifted benzotriazole-based UV absorber for coatings, printing and packaging, adhesives and sealants. It was designed for solvent-based to meet high performance and durability requirements of solvent-based automotive, industrial and powder coatings.
key benefits	very red shifted spectral coverage excellent long-term performance excellent thermal stability
chemical nature	2-(2-hydroxyphenyl)-benzotriazole derivative
CAS number	proprietary

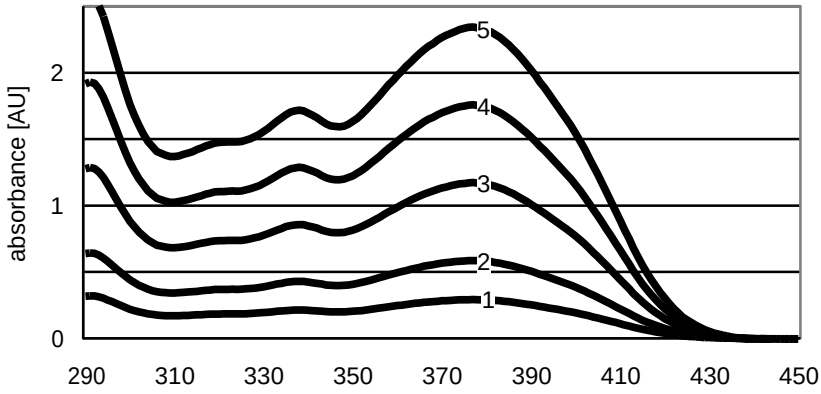
Properties

physical form	yellow powder	
storage	When kept in original unopened containers and at temperatures of 5 – 35 °C (41 – 95 °F), Tinuvin® 970® can be stored for up to 3 years from the date of manufacture.	
typical properties (no supply specification)	melting point (92/69/EEC A.1 DSC)	132 – 136 °C (270 – 277 °F)
solubility	Solvesso®[1] 100	≤ 40 %
	butyl acetate (CAS No. 123-86-4)	≤ 20 %

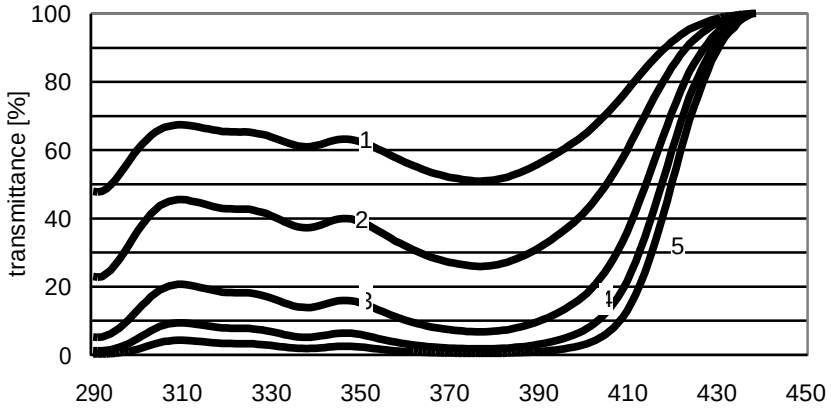
[1] registered trademark of Exxon Mobil Corporation

spectral properties

UV absorbance



UV transmittance



legend

1	10 mg/l (0.001 % ≈ 0.25 % active in 40 µm)
2	20 mg/l (0.002 % ≈ 0.50 % active in 40 µm)
3	40 mg/l (0.004 % ≈ 1.00 % active in 40 µm)
4	60 mg/l (0.006 % ≈ 1.50 % active in 40 µm)
5	80 mg/l (0.008 % ≈ 2.00 % active in 40 µm)

The theoretical concentration in an applied 40-µm 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

- in general for coatings or substrates needing protection up to 420 nm
- in general for coatings over substrates very sensitive to UV-A

For outdoor applications, Tinuvin® 970 needs to be combined with a hindered amine light stabilizer (HALS) such as Tinuvin® 123 (for acid-catalyzed systems) or Tinuvin® 292 (for 2K PUR).

binder systems

- 1K and 2K PUR (acrylic/NCO, PES/NCO, …)
- thermosetting (acrylic/melamine, PES/melamin)
- thermoplastic (acrylic, vinylic, …)

recommended concentrations

The concentration of Tinuvin® 970 depends on dry-film thickness and desired degree of protection. The amount required for optimum performance should be determined in trials covering a concentration range.

dry-film thickness	by weight on binder solids
10 – 20 µm	10.00 – 5.00 %
20 – 40 µm	5.00 – 2.50 %
40 – 60 µm	2.50 – 1.25 %

For optimum spectral coverage, Tinuvin® 970 can be combined with triazine based UV absorber such as Tinuvin® 400 (in liquid paints) and Tinuvin® 405 (in powder coatings).

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.

BASF SE
Pigments & Resins Europe
67056 Ludwigshafen, Germany
www.basf.com/resins
service-edc@basf.com