Tinuvin® 5151

Light stabilizer blend

Product description

Tinuvin® 5151 is a liquid light stabilizer blend containing a benzotriazole-based UV absorber and a basic HALS for coatings, adhesives and sealants. It was designed to meet high performance and durability requirements of exterior solvent- and water-based transportation, industrial, architectural and decorative coatings.

Key benefits

- Universally applicable in water- and solvent-based coatings
- Medium long-term performance and thermal stability
- Broad spectral coverage makes it suitable for a wide range of coatings
- Contains a basic multi-purpose HALS
- Synergistic combination imparts superior coating protection against gloss reduction, cracking, blistering, delamination or color change, providing full substrate protection

Chemical nature

Blend based on a hydrophilic 2-(2-hydroxyphenyl)-benzotriazole UV absorber and a basic pentamethyl piperidine HALS

Properties

Physical form

Viscous amber liquid

Technical data

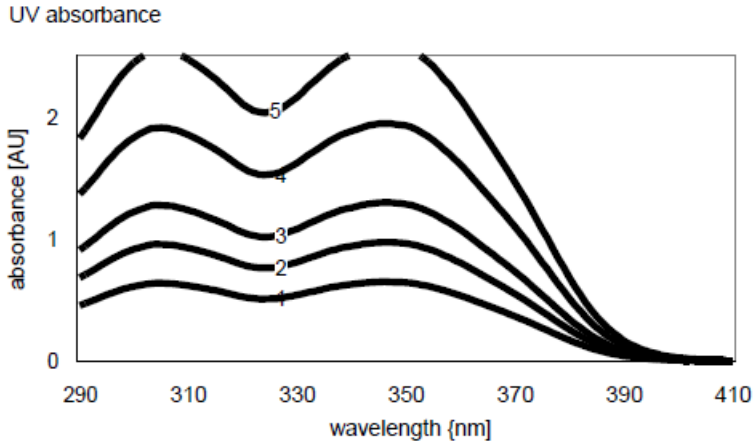
(not supply specification)

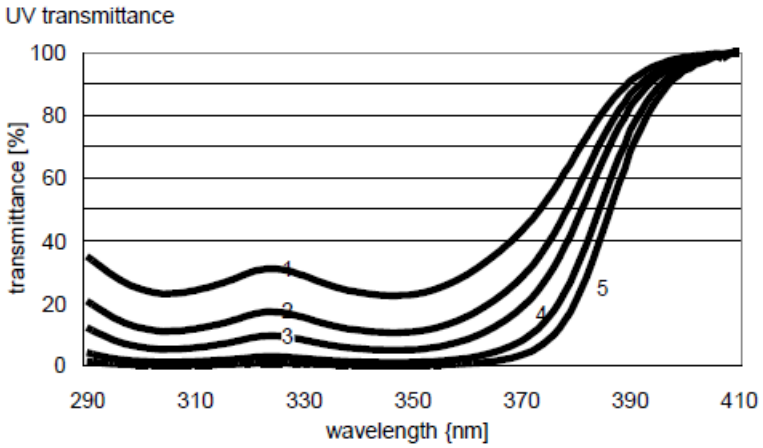
Viscosity, dynamic	DIN 53018/53019 (20 °C)	~ 2,800 mPa.s
Density	DIN 51757 (20 °C)	1.08 – 1.12 g/cm³
Flash point	DIN EN ISO 13736	150 – 154 °C

Miscibility

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

Spectral properties





Legend

1	40 mg/l (0.004 % ≈ 1.00 % active in 40 µm)
2	60 mg/l (0.006 % ≈ 1.50 % active in 40 µm)
3	80 mg/l (0.008 % ≈ 2.00 % active in 40 µm)
4	120 mg/l (0.012 % ≈ 3.00 % active in 40 µm)
5	160 mg/l (0.016 % ≈ 4.00 % 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

The UVA:HALS ratio chosen and the hydrophilic nature of the UV absorber used make Tinuvin® 5151 especially suitable for water- and solvent-based clear coatings with a layer thickness from 30 – 60 µm.

- Transportation and refinish coatings
- General industrial coatings
- Architectural coatings
- Wood stains and varnishes, wood-care products
- Heavy-duty maintenance and marine coatings
- Adhesives and sealants

Binder systems

- Water-based systems (acrylic, hybrids, PUD, 2K PUR, …)
- 1K and 2K PUR (acrylic/NCO, PES/NCO, …)
- Thermoplastic (acrylic, vinylic, …)

Caution: The basic HALS component can undergo acid/base interactions with paint components such as biocides, surfactants and pigments. It can also interfere with acid-catalyzed crosslinking reactions or retard the curing of some air-drying systems (e.g., alkyds or oil- based paints).

Recommended concentrations

The concentration of Tinuvin® 5151 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
20 – 40 µm	10 – 6 %
40 – 60 µm	6 – 4 %

Storage

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

Tinuvin® 5151 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.

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Resins &Additives (Europe)
67056 Ludwigshafen, Germany
www.basf.com/resins

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