

# Tinuvin® 5251

Light stabilizer blend

## Product description

Tinuvin® 5251 is a liquid light stabilizer blend containing a triazine- 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-based automotive, industrial, architectural and decorative coatings including radiation-curable systems (UV, electron beam).

## Key benefits

- Blend for coatings exposed to high baking temperatures and/or extreme environmental conditions, thermally highly stable, photo-permanent
- Contains a basic multi-purpose HALS
- The 2-hydroxyphenyl-s-triazine UV absorber used is not sensitive to metal ions and amines and does not form colored complexes in their presence
- 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 2-hydroxyphenyl-s-triazine UV absorber and an pentamethyl piperidine HALS

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## Properties

### Physical form

Viscous slightly yellow liquid

### Technical data

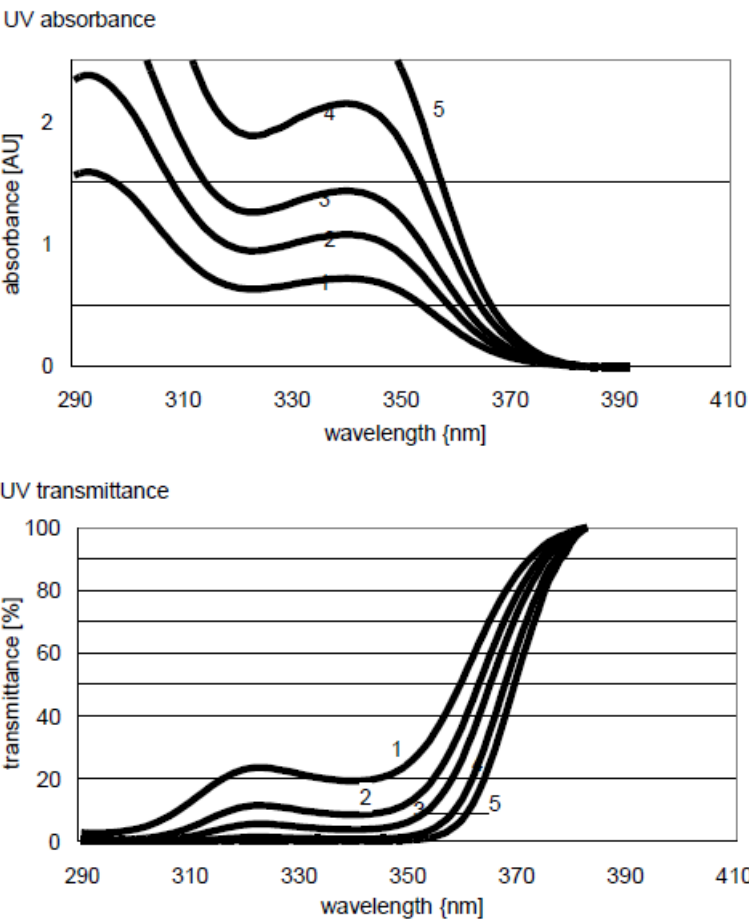
(not supply specification)

Viscosity, dynamic	DIN 53018/53019 (20 °C)	~ 4,400 mPa.s
Density	DIN 51757 (20 °C)	1.02 – 1.06 g/cm <sup>3</sup>
Flash point	DIN EN ISO 13736	43 – 47 °C

### Miscibility

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

Spectral properties



Legend

- |   |  |
|---|--|
| 1 | 40 mg/l (0.004 % $\approx$ 1.00 % active in 40 $\mu$ m)  |
| 2 | 60 mg/l (0.006 % $\approx$ 1.50 % active in 40 $\mu$ m)  |
| 3 | 80 mg/l (0.008 % $\approx$ 2.00 % active in 40 $\mu$ m)  |
| 4 | 120 mg/l (0.012 % $\approx$ 3.00 % active in 40 $\mu$ m) |
| 5 | 160 mg/l (0.016 % $\approx$ 4.00 % active in 40 $\mu$ m) |

The theoretical concentration in an applied 40- $\mu$ 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 chosen UVA:HALS ratio makes Tinuvin® 5251 especially suitable for solvent-based clear coatings with a layer thickness from 30 – 60 µm exposed to high baking temperatures and/or to extreme environmental conditions.

- (non-acid-catalyzed) automotive and transportation coatings
- General industrial coatings
- Architectural coatings (i.e., floor or cement coatings, ...)
- Heavy-duty maintenance and marine coatings
- Adhesives and sealants

## Binder systems

- Thermoplastics (acrylic, vinylic, ...)
- 1K and 2K PUR (acrylic/NCO, PES/NCO, ...)
- Epoxy/carboxy (amine- and/or metal-catalyzed)
- UV- and EB-curable coatings

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® 5251 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	7.5 – 4.0 %
40 – 60 µm	4.0 – 3.0 %

## Storage

When kept in original unopened containers and at temperatures of 5 – 35 °C.  
Tinuvin® 5251 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.