

Printing & Packaging

Industrial Coatings

Technical Data Sheet

Tinuvin® 5050



Product Description

Tinuvin® 5050 is a solvent-free, liquid blend of a 2-(2-hydroxyphenyl)-benzotriazole UV absorber (UVA) and a basic hindered amine light stabilizer (HALS) designed to fulfill the high cost/performance and durability requirements of exterior solventborne industrial and decorative coatings.

Key Features & Benefits

- Synergistic blend of UVA/HALS for solvent based systems
- Provides protection of coatings against cracking, loss of gloss, and color change
- Recommended for non-acid catalyzed systems

Chemical Composition

Blend of 2-(2-hydroxyphenyl)-benzotriazole UVA and a basic HALS

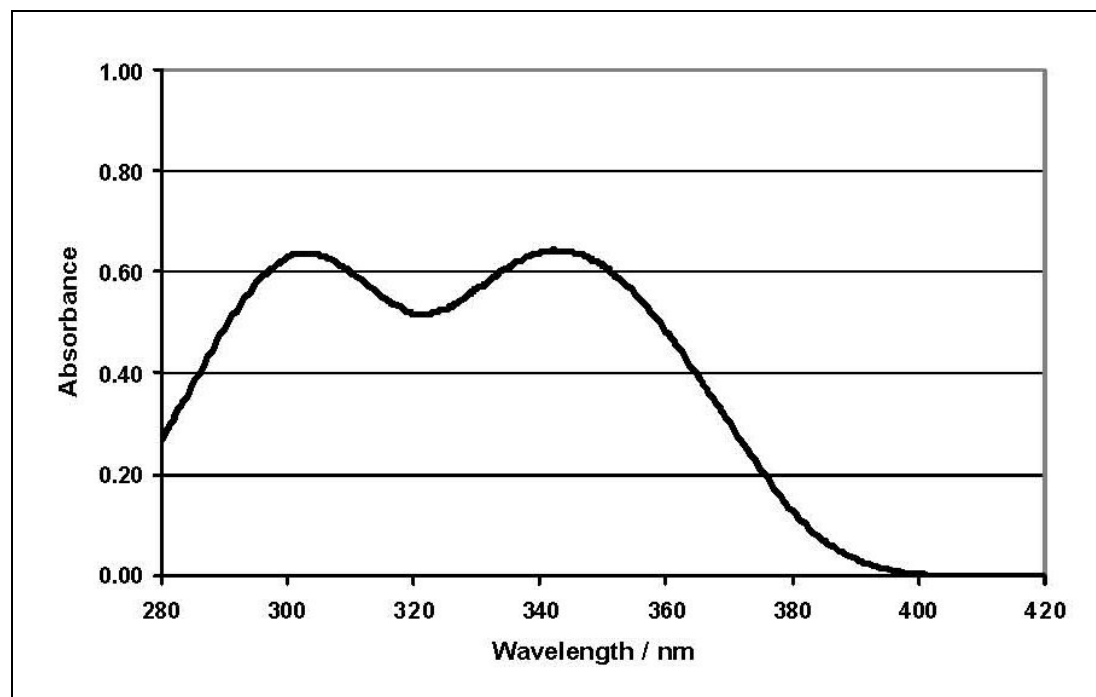
Properties

Typical Properties

Appearance	viscous amber liquid
Dynamic Viscosity at 25 °C	10,000 cps
Density at 20 °C	1.034 g/cm ³
Miscibility	Tinuvin® 5050 is miscible to more than 50% with most commonly used paint solvents. Water solubility is less than 0.01%.

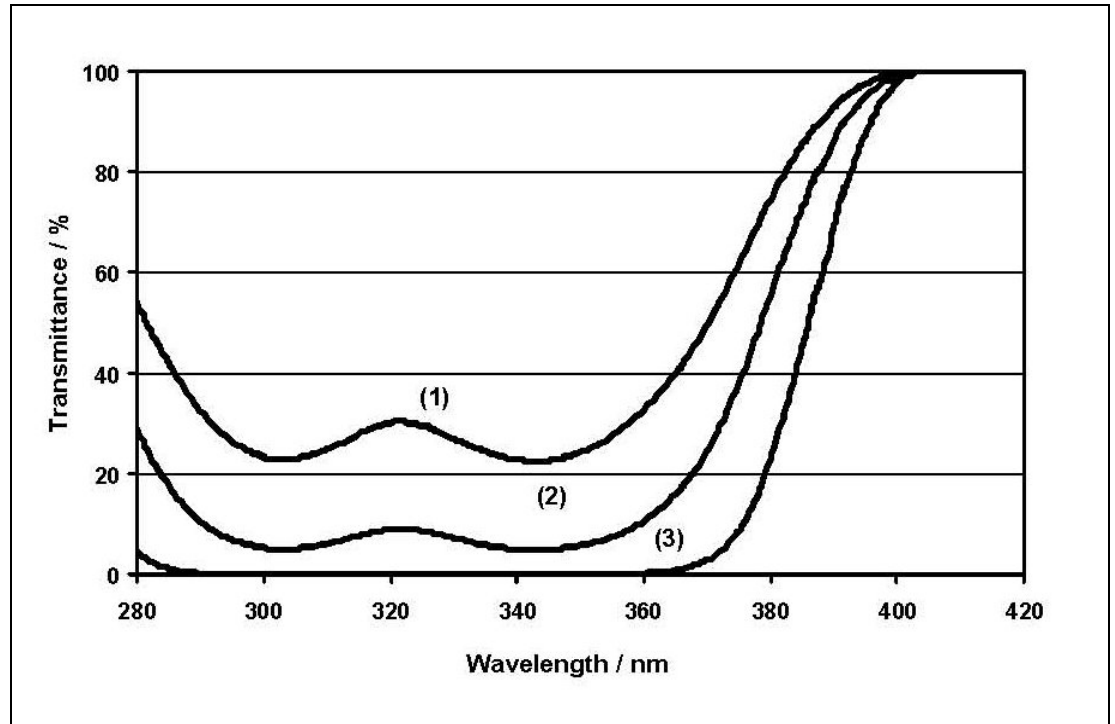
These typical values should not be interpreted as specifications.

UV Absorbance Spectrum (40 mg/l in chloroform, cell thickness = 1 cm)



UV Transmission Spectrum

(The theoretical concentration of the UVA in an applied 40 µm clear coat was calculated as a function of the concentration in chloroform ($d = 1.48 \text{ g/cm}^3$) with the help of the Lambert-Beer law)



Line one: 0.003 % Tinuvin® 5050 corresponds to 0.68% active UVA in a 40 µm film

Line two: 0.005 % Tinuvin® 5050 corresponds to 1.35% active UVA in a 40 µm film

Line three: 0.014 % Tinuvin® 5050 corresponds to 3.38% active UVA in a 40 µm film

Applications

Tinuvin® 5050 is a versatile light stabilizer that can be used in a variety of coatings systems such as:

- Wood stains and varnishes, wood care products, waxes
- Architectural coatings (roof tiles, walls, floor coatings)
- General Industrial Paints
- Heavy duty maintenance and marine coatings
- Glass and ceramic coatings (architectural glazing, packaging)
- Adhesives and bonding layers

Its use is especially recommended for clear and light pigmented systems like:

- Thermoplastics (Acrylics, Vinylics)
- 1 and 2 K-PUR (Acrylic/NCO, PES/NCO)

The broad UV absorbance of Tinuvin® 5050 makes it suitable for a wide range of coatings for wood, plastics and metal. The synergistic combination imparts superior coating protection against gloss reduction, cracking, blistering, delamination, and color change and provides full substrate protection.

Recommended concentrations

The amount of Tinuvin® 5050 required for optimum performance should be determined in trials covering a concentration range.

The dry film thicknesses (DFT) directly affects the amount of UVA needed. The following recommended concentrations are to achieve proper stabilization for given DFT (light stabilizers % is indicated on total formulation):

10 µm – 20 µm:	8.0 % – 4.0 %
20 µm – 40 µm:	4.0 % – 2.0 %
40 µm – 80 µm:	2.0 % – 1.0 %

Safety

General

The usual safety precautions when handling chemicals must be observed. These include the measures described in Federal, State and Local health and safety regulations, thorough ventilation of the workplace, good skin care and wearing of protective goggles.

Safety Data Sheet

All safety information is provided in the Safety Data Sheet Tinuvin® 5050.

Important

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