

Tinuvin[®] 9945-DW (N)

Product Description

Tinuvin 9945-DW (N) is a solvent-free, aqueous UV absorber dispersion for high performance industrial and decorative waterborne coating applications.

Key Features & Benefits

- Encapsulated hydroxyphenyl-benzotriazole UVA
- Ease of incorporation into water-based coatings
- Permits formulation of low/zero VOC coatings
- Can be blended with other encapsulated products to balance price/performance profile

Chemical Structure

Hydroxy-phenyl-benzotriazole derivative

Properties

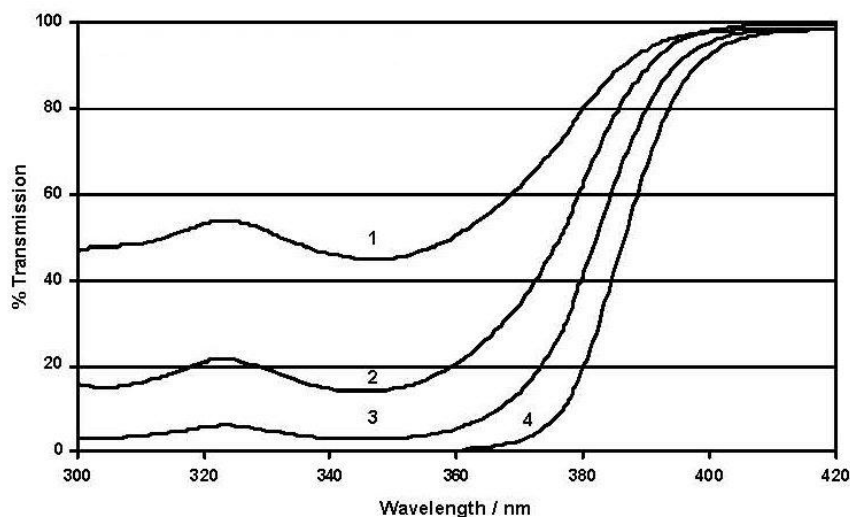
Typical Properties

| | | |
|--------------------------------|-------------------|-------------------------|
| Appearance | | light yellow dispersion |
| UV absorber content | wt% | 45 |
| Solid content | wt% | ca 52 |
| Particle size D _{INT} | nm | < 250 |
| pH | | 6 – 9.5 |
| Dynamic Viscosity at 20 °C | cps | 10 – 50 |
| Density at 20 °C | g/cm ³ | 1.05 – 1.10 |

These typical values should not be interpreted as specifications.

Transmittance Spectrum

(in 80:20 toluene:THF; path = 1 cm)



- Line one: 0.0025% Tinuvin 9945-DW (N) corresponds to 0.30% active UVA in a 40 µm film
Line two: 0.005% Tinuvin 9945-DW (N) corresponds to 0.60% active UVA in a 40 µm film
Line three: 0.010% Tinuvin 9945-DW (N) corresponds to 1.20% active UVA in a 40 µm film
Line four: 0.020% Tinuvin 9945-DW (N) corresponds to 2.40% active UVA in a 40 µm film

Applications

Tinuvin 9945-DW (N) is a versatile UV absorber that is easy to incorporate into aqueous paints as a simple stir-in product. Based on Tinuvin 9945-DW (N), it provides good UV stabilization and is suited for high performance waterborne industrial and decorative coating applications.

Tinuvin 9945-DW (N) protects the color and appearance of natural and stained, tinted, or printed wood, paper, board, and other lingo-cellulosic substrates as well as composites containing them (i.e. WPC based on wood flour or other vegetal fibers). Its protective effects can be enhanced when Tinuvin 9945-DW (N) stabilized varnishes are applied on wood substrates that have been pretreated with Lignostab® 1198 lignin stabilizer containing solutions.

Tinuvin 9945-DW (N) is recommended for applications such as:

- Wood stains and varnishes, wood care products, waxes
- Automotive and general industrial paints
- Plastic coatings (films, bottles, containers, liners, tarpaulins, ...)
- Coatings on PC and PMMA sheets, panels, glasses
- UV blocking coats on printed goods (paper, board, laminates, ...)
- Architectural coatings (roof tiles, walls, floor coatings, ...)
- Glass and ceramic coatings (architectural glazing, packaging, ...)
- Adhesives and bonding layers

Processing

It is not necessary to add co-solvents or to use specific high energy dispersion equipment to obtain homogeneous mixing. Sedimentation is not observed during long term storage of liquid paints. Tinuvin 9945-DW (N) has minor influence on dry coating film properties such as gloss, transparency, water sensitivity, and blocking resistance. It's very high thermo- and photo-stability and high-water leaching resistance confer coatings long-lasting UV protection.

Recommended concentrations

The amount of Tinuvin 9945-DW (N) required for optimal performance depends on film thickness and pigmentation. It should be determined by a series of laboratory trials covering a concentration range.

2 – 10% Tinuvin 9945-DW (N) (as supplied) in topcoats = 0.5 – 2.5% active UVA
(stabilizer weight percent concentration on coating binder solids)

Outdoor applications:

+ 2 – 10% Tinuvin 123-DW (N) (as supplied) = 0.6 – 3% active HALS on binder solids

Pale wood substrate on pretreatment (improved color protection):

+ 0.8 – 2.0% Lignostab 1198 in water or aqueous, water/co-solvent-based primer formulations (% total formulation)

Safety

General

The usual safety precautions when handling chemicals must be observed. These include the measure 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 for Tinuvin 9945-DW (N).

Storage

Please refer to the "Handling and Storage of Polymer Dispersions" brochure.

Important

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