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Tinuvin® 400-DW (N)

Product Description

Tinuvin 400-DW (N) is an aqueous dispersion of a 2-hydroxy-phenyl-s-triazine (HPT) UV absorber (UVA) developed for waterborne coatings.

Key Features & Benefits

- Encapsulated hydroxyphenyl-triazine UVA with high extinction in the UV-B region
- Low color, low migration
- Minimal interaction with metal catalysts and amine crosslinkers
- Ease of incorporation into water-based coatings
- Enables formulating of low/zero VOC coatings
- Excellent photopermanence

Chemical Composition

2-hydroxy-phenyl-s-triazine derivative

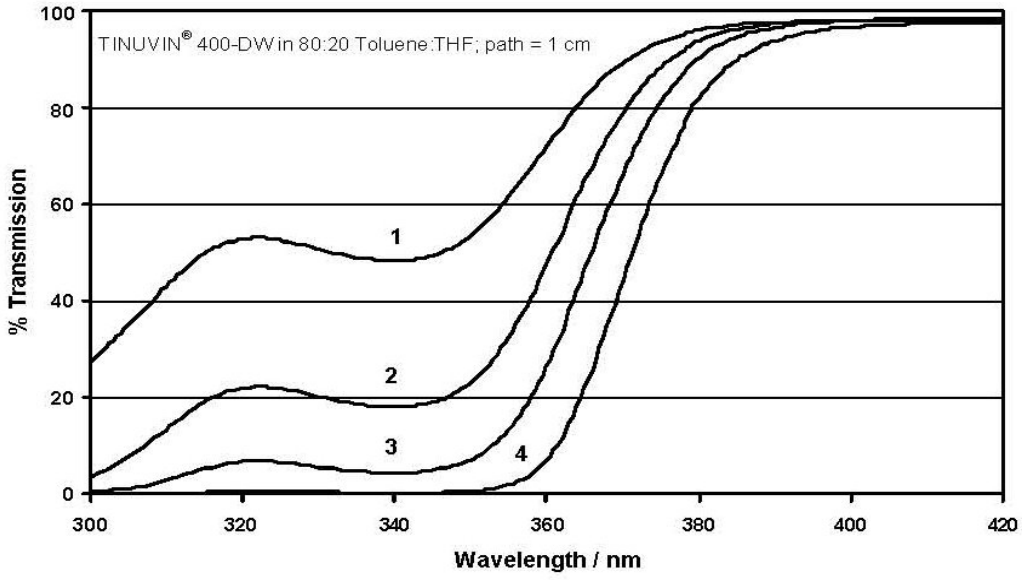
Properties

Typical Properties

Appearance		white dispersion
UV absorber type		2-hydroxyphenyl-s-triazine (HPT)
UV absorber content	wt %	20
Solid content	wt %	ca 40
Particle size D INT	nm	< 250
Dynamic Viscosity at 25°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



First Line: 0.001% Tinuvin 400-DW (N), corresponds to 0.25% in a 40 µ film
Second Line: 0.002% Tinuvin 400-DW (N), corresponds to 0.50% in a 40 µ film
Third Line: 0.004% Tinuvin 400-DW (N), corresponds to 1.0% in a 40 µ film
Fourth Line: 0.006% Tinuvin 400-DW (N), corresponds to 1.5% in a 40 µ film

Applications

Tinuvin 400-DW (N) is a versatile UV absorber which can be used in a variety of waterborne coating systems. It has been designed to fulfill the high cost/performance and durability requirements of interior and exterior industrial, decorative and automotive coatings. The high thermal stability and photo-permanence makes it suitable for coatings exposed to high bake temperatures and/or to extreme environmental conditions. It is not sensitive to metal ions and amines and does not form colored complexes in their presence. Tinuvin 400-DW (N) is ideal for applications where strong protection from UV-B radiation is required. In general, it fully keeps dry film optics such as self-color, gloss and transparency. Other coating film properties such as water impermeability and blocking resistance, hardness and scratch resistance are not reduced.

Its use is recommended for clear and lightly pigmented coatings in applications such as:

- Automotive OEM and refinish coatings
- General industrial finishes
- 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

Tinuvin 400-DW (N) is especially suited for waterborne acrylics and PUD dispersions or where traditional 2-(2-hydroxy-phenyl)-benzotriazole UVAs fail due to metal and/or amine interactions with color formation.

For outdoor applications Tinuvin 400-DW (N) should be combined with hindered amine light stabilizers (HALS) such as Tinuvin 123-DW (N) or Tinuvin 292 to enhance performance. Such synergistic combinations exhibit excellent protection against surface defects like loss of gloss, chalking and cracking, blistering and delaminating as well as preventing color change for both the coating and the substrate.

The amount of Tinuvin 400-DW (N) required for optimum performance depends on film thickness and pigmentation. It should be determined by a series of laboratory trials covering a concentration range.

Recommend Concentrations

2 – 10% Tinuvin 400-DW (N) (as supplied) = 0.4 – 2% active UV absorber
(concentration based on weight percent binder solids)

For outdoor applications: + 2 – 10% Tinuvin 123-DW (N) (as supplied) = 0.6 – 3% active HALS

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 400-DW (N).

Storage

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

Important

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