We create chemistry

Tinuvin® 477-DW (N)

Product Description

Tinuvin 477-DW (N) is an aqueous UV absorber dispersion developed for waterborne coatings.

Key Features & Benefits

- Encapsulated hydroxyphenyl-triazine with excellent absorbance in the UV-A region
- Enables formulating of low/zero VOC coatings
- Ease of incorporation into water-based coatings
- Excellent photo-permanence

Chemical Composition

Hydroxy-phenyl-s-triazine UV absorber

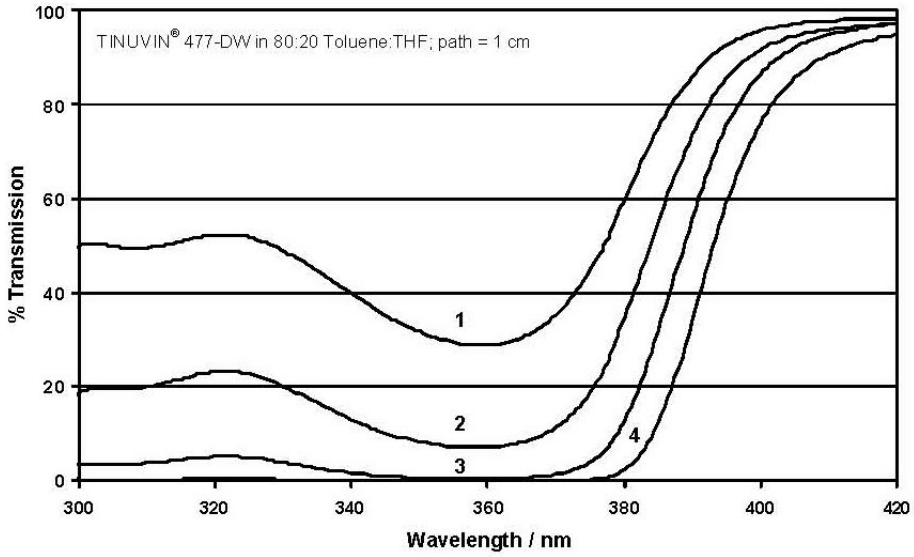
Properties

Typical Properties

Appearance		light yellow dispersion
UV absorber content	w/w%	20
Solid content	w/w%	40
Particle size D_{INT}	nm	< 200
pH		6 – 9.5
Dynamic Viscosity at 25 °C	cps	~ 50
Density at 20 °C	g/cm^3	1.05

These typical values should not be interpreted as specifications.

Transmission Spectrum



(1) 0.005% Tinuvin 477-DW (N) correspond to 0.25% active UVA in a 40 µm film
(2) 0.010% Tinuvin 477-DW (N) correspond to 0.50% active UVA in a 40 µm film
(3) 0.020% Tinuvin 477-DW (N) correspond to 1.00% active UVA in a 40 µm film
(4) 0.040% Tinuvin 477-DW (N) correspond to 2.00% active UVA in a 40 µm film

Applications

Tinuvin 477-DW (N) is an aqueous UV absorber dispersion developed for waterborne coatings. Based on a red shifted hydroxyphenyl-s-triazine UV absorber, it is suited for coatings and substrates requiring strong UVA range wavelength protection. Its high heat stability and excellent photo-permanence provide superior UV stabilization and fulfill the requirements of high performance industrial, decorative, and wood coatings.

Tinuvin 477-DW (N) is recommended for clear and lightly pigmented coatings in applications such as:

- Wood stains and varnishes, wood care products, waxes
- Coatings on plastics (films, bottles, containers)
- Coatings on PC and PMMA sheets, panels, glasses
- UV blocking varnishes on printed materials (paper, board, wood)
- Glass coatings (architectural glazing, packaging)
- Adhesives and bonding layers

Tinuvin 477-DW (N) is particularly suited for the protection of UVA range sensitive substrates, prints, or contents. It's very high thermo- and photo-stability and high-water leaching resistance confer an extremely durable protection to coatings and coated substrates.

Tinuvin 477-DW (N) protects efficiently the color and appearance of natural and stained wood. It is also particularly suited for UV blocking varnishes on tinted or printed materials to prevent fading of the prints.

Processing

Tinuvin 477-DW (N) is easy to incorporate into aqueous paints as a simple stir-in product. Homogeneous mixing is possible without co-solvents and without using high energy dispersion equipment. Sedimentation or separation does not occur during long term storage of liquid paints. Tinuvin 477-DW (N) has a minor influence on dry coating film properties such as gloss, transparency, water sensitivity, and blocking resistance.

The color protection of natural, stained, tinted, or printed wood, paper, board, and other lingo-cellulosic substrates as well as composites containing them (WPC-based on wood and other vegetal fibers) can be improved when Tinuvin 477-DW (N) stabilized varnishes are applied on substrates that have been pretreated with Lignostab® 1198 lignin stabilizer.

The amount of Tinuvin 477-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.

Recommended concentrations

2.0 – 10.0% Tinuvin 477-DW (N) (as supplied) in topcoats = 0.4 – 2% active UV absorber

For wood substrate pretreatments (for improved color protection):
0.5 – 2% Lignostab 1198 in water or aqueous, water/co-solvent-based primer formulations (% on total formulation)

(concentrations are based on weight % of binder solids)

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 477-DW (N).

Storage

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

Important

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