

# Printing & Packaging Industrial Coatings

Technical Data Sheet

## Tinuvin<sup>®</sup> 400



### Product Description

Tinuvin<sup>®</sup> 400 is a liquid hydroxyphenyl-triazine (HPT) UV absorber designed to fulfill the high performance and durability needs of waterborne, solventborne, and 100% solids automotive and industrial finishes. Its low color and stability make it an excellent choice for all coatings where low color characteristics are ideal for use in combination with the newest generation photoinitiators to provide durable UV clear coats.

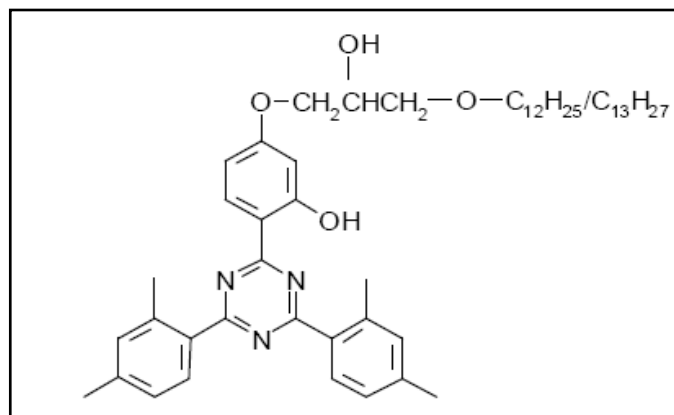
### Key Features & Benefits

- Hydroxyphenyl-triazine with high absorbance in the UV-B region
- Low color, low migration
- Minimal interaction with metal catalysts and amine crosslinkers
- Excellent photo-permanence

### Chemical Structure

Tinuvin<sup>®</sup> 400 is a mixture of: 2-[4-[(2-Hydroxy-3-dodecyloxypropyl)oxy]-2-hydroxyphenyl]-4,6-bis(2,4-dimethylphenyl)-1,3,5-triazine & 2-[4-[(2-Hydroxy-3-tridecyloxypropyl)oxy]-2-hydroxyphenyl]-4,6-bis(2,4-dimethylphenyl)-1,3,5-triazine

Tinuvin<sup>®</sup> 400 is an 85% solution of the active substance in 1-methoxy-2-propanol



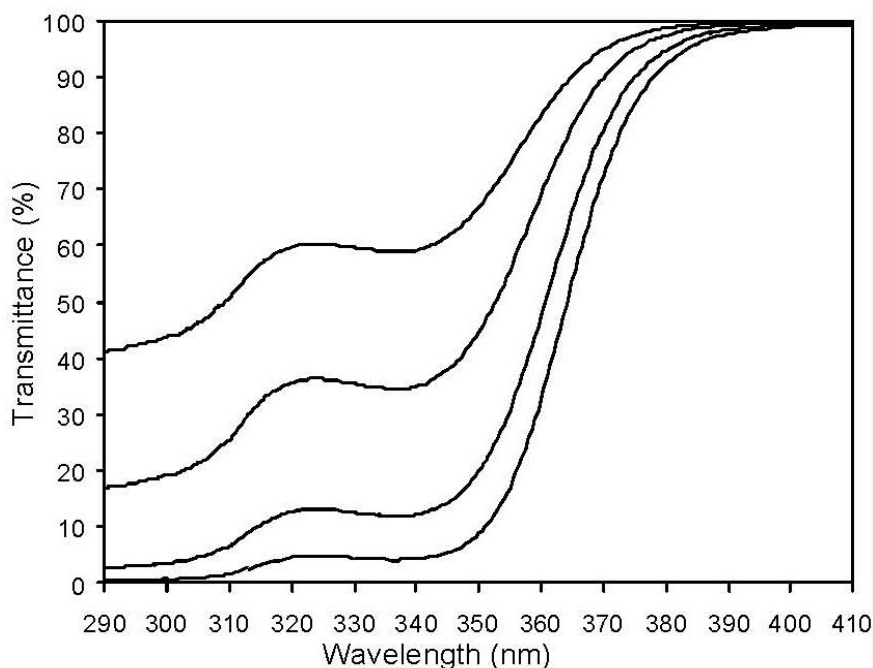
### Properties

#### Typical Characteristics

CAS No:	Active Substance	153519 – 44 – 9
	1-Methoxy-2-propanol	107 – 98 – 2
Appearance	yellow to light amber viscous liquid	
Molecular weight	~ 647 avg.	
Density	1.07 g/cm <sup>3</sup>	
Miscibility	Miscible with most customary organic solvents; practically immiscible with water	

These typical values should not be interpreted as specifications.

**Transmittance Spectrum**  
(in chloroform, cell thickness = 1 cm)



Top Line: 0.001% Tinuvin<sup>®</sup> 400, corresponds to 0.25% in a 40 μ film  
 Second Line: 0.002% Tinuvin<sup>®</sup> 400, corresponds to 0.50% in a 40 μ film  
 Third Line: 0.004% Tinuvin<sup>®</sup> 400, corresponds to 1.00% in a 40 μ film  
 Bottom Line: 0.006% Tinuvin<sup>®</sup> 400, corresponds to 1.50% in a 40 μ film

## Applications

Tinuvin<sup>®</sup> 400 a liquid hydroxyphenyl-triazine (HPT) UV absorber that provides excellent performance in coatings due to:

- very high thermal stability and performance for coatings exposed to high bake cycles and/or extreme environmental conditions
- hydroxy functionality to minimize migration
- high photo-stability for long life performance

high concentration for maximum efficiency

Tinuvin<sup>®</sup> 400 has been developed as an interaction-free UV absorber for use in amine and/or metal catalyzed coating systems and coatings applied on base-coats or substrates containing such catalysts.

Tinuvin<sup>®</sup> 400 is recommended for both solvent- and waterborne automotive OEM and refinish coating systems, UV cured coatings, and industrial coatings where long life performance is essential.

The protective effects of Tinuvin<sup>®</sup> 400 can be enhanced when used in combinations with a HALS such as Tinuvin<sup>®</sup> 123 or Tinuvin<sup>®</sup> 292. These combinations improve the durability of clear coats by retarding gloss reduction, delamination, cracking, and blistering.

The amount of Tinuvin<sup>®</sup> 400 required for optimum performance should be determined in trials covering a concentration range.

## Recommend Concentrations

1.0 – 3.0 %	Tinuvin <sup>®</sup> 400
+	
0.5 – 2.0 %	Tinuvin <sup>®</sup> 123, Tinuvin <sup>®</sup> 144, or Tinuvin <sup>®</sup> 292

(concentrations are based on weight percent binder solids)

## 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.

### Material Safety Data Sheet

All safety information is provided in the Material Safety Data Sheet Tinuvin® 400.

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## Important

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### U.S. & Canada

BASF Corporation  
1609 Biddle Avenue  
Wyandotte, Michigan 48192  
Phone: (800) 231 – 7868  
Fax: (800) 392-7429  
Email: [polyorders@basf.com](mailto:polyorders@basf.com)  
Email: [edtech\\_info@basf.com](mailto:edtech_info@basf.com)  
[www.basf.com](http://www.basf.com)

### Mexico

BASF Mexicana, S.A. de C.V.  
Av. Insurgentes Sur # 975  
Col. Ciudad de los Deportes  
C.P. 03710  
Mexico, D.F.  
Phone: (52-55) 53-25-27-87  
(52-55) 53-25-26-87  
Fax: (52-55) 56-11-48-97