BLS® 1328

Ultraviolet Light Absorber & Stabilizer

Introduction:

BLS® 1328 is a benzotriazole type ultraviolet light absorber (UVA), imparting good light stability for plastics and other organic polymers. BLS® 1328 protects polymers as well as organic pigments from UV radiation helping to preserve the original appearance and physical integrity of molded articles, films, sheets, and fibers during outdoor weathering.

Material Description:

Benzotriazole Ultraviolet Light Absorber

Chemical Name:

2-(2'-Hydroxy-3', 5'-di-tert-amylphenyl) benzotriazole

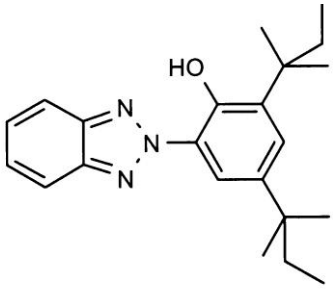
Empirical Formula:

$C_{22}H_{29}N_3O$

CAS #:

25973-55-1

Chemical Structure:



Physical Properties:

Appearance:	Slightly yellow Powder or Pellet
Molecular Weight:	351.5
Melting Range:	80-88°C
Flashpoint (Ignition):	390°C BAM
Percent Volatile:	< 0.5% Max
Color of Toluene Solution:	Clear
%Transmittance	460 nm - 94%Min 500 nm - 97% Min
Specific Gravity:	~ 1.17 (H_20 = 1)
Vapor Pressure:	4.7 X $10^{(-6)}$ mm Hg, 20°C.
Decomposition Temperature:	> 220°C

Solubility at 20°C (g/100ml solvent):

Solvent	Solubility
Acetone	6%
Benzene	39%
Butyl Carbitol	3.5%
Butanol	2.5%
Butylacetate	15%
Chloroform	44%
Ethyl Acetate	20%
Ethylglycol	4%
n-Hexane	16%
MEK	14%
Methanol	0.4%
Methylene Chloride	56%
Xylene	34%
Water	< 0.01%

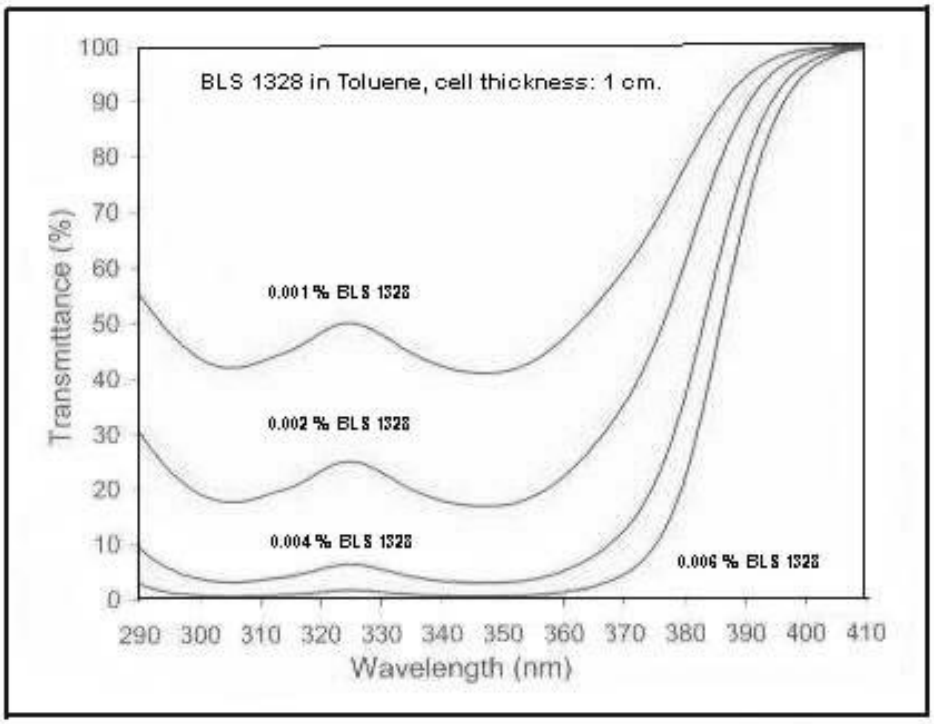
Applications:

High solubility and superior properties make BLS® 1328 particularly suitable for light stabilizing in coatings, propylene, polyurethane and polyvinyl chloride. BLS® 1328 is also efficient for the light stabilization of unsaturated polyester, polyacrylate, polycarbonate, rigid and flexible polyvinyl chloride, ABS, epoxy, acrylic, and polystyrene. BLS® 1328 features strong UV absorption, low color contribution, and moderately low volatility which makes it highly recommended for protective coatings and a variety of automotive coating substrates like two component polyurethanes and thermoset acrylic enamels. BLS® 1328 has excellent solubility in urethane solvents, is non-reactive and has no effect on the cured properties of the coating while protecting against loss of gloss. In thermoset acrylic enamels the low volatility and high solubility of BLS® 1328 make it especially attractive in thermosetting acrylic finishes. BLS® 1328 protects against loss of gloss and is useful in thermosetting acrylic clear topcoats where it protects against interfacial adhesive loss between the topcoat and the base coat. BLS® 1328 is generally superior to other ultraviolet light absorbers in terms of retaining color after light exposure, especially when used in combination with BNX® 1010. BLS® 1328 can also be used in combination with hindered amine light stabilizers to provide enhanced performance.

Advantages:

- Strong absorption of ultraviolet radiation in the 290-400 nm region
- Readily soluble in a wide range of organic solvents
- Low initial color
- Low volatility during high processing temperatures
- Good extraction resistance
- Excellent compatibility with a variety of polymers

Transmission Spectrum:



Loading Instructions:

The loading data and results are based on laboratory work (and field-testing) under controlled conditions and do not necessarily indicate the result that the buyer or user will attain. For this reason, we strongly recommend testing of your own system under the actual conditions of processing and end-use prior to full scale testing. The general recommended loading concentration range between 0.10% and 1.0% depending on substrate, processing conditions, and long-term stability requirements.

In coatings applications loading levels range between 1.0% and 3.0%, and the loading levels in unsaturated polyester range from 0.2% and 0.4 %. In polypropylene the loading levels range between 0.3% and 0.6%, and in polyurethanes the loading levels range between 0.3% and 1.0%.

The loading concentrations in polyvinyl chloride ranges between 0.2%-0.5%, and in polycarbonate and polyacrylate the loading levels range between 0.15% and 0.3% based on polymer weight. Exact loading must be determined by compositions of the specific polymer systems.

Packaging:

BLS® 1328 is available in powder form in a 20 kg (44.1 LB) fiber drum, net weight, with an inner PE liner.

Storage:

This product may be stored for one year in a sealed container. Containers should be stored in a cool, dry area. Extended storage at elevated temperatures or exposure to direct heat or sunlight could reduce product life. Keep containers sealed when not in use.

Toxicity & Safety:

This material is not intended for use in products for which prolonged contact with mucous membranes or abraded skin, or implantation within the human body is specially intended, unless the finished product has been tested in accordance with the Food and Drug Administration and/or other applicable safety testing requirements. Because of wide range of such potential uses, Mayzo, Inc. is not able to recommend this material as safe and effective for such uses and assumes no liability for any such uses. Read and understand the Material Safety Data Sheet before using or handling this product.

FDA Regulations:

BLS® 1328 may be used in adhesives complying with Title 21, Code of Federal Regulations, Section 175.105.