



BLS® 5411

Ultraviolet Light Absorber & Stabilizer

Introduction: BLS® 5411 is a benzotriazole type ultraviolet light absorber (UVA), imparting good light stability for plastics and other organic polymers. BLS® 5411 protects polymers as well as organic pigments from UV radiation helping to preserve the original appearance and physical integrity of polymeric systems; particularly in polyesters, polyvinyl chlorides, styrenics, acrylics, polycarbonates and polyvinyl butyral during outdoor weathering.

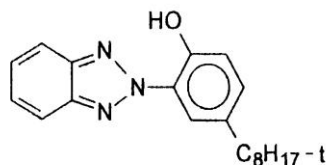
Material Description: Benzotriazole Ultraviolet Light Absorber

Chemical Name: 2-(2-hydroxy-5-tert-octylphenyl) benzotriazole

Empirical Formula: C₂₀H₂₅N₃O

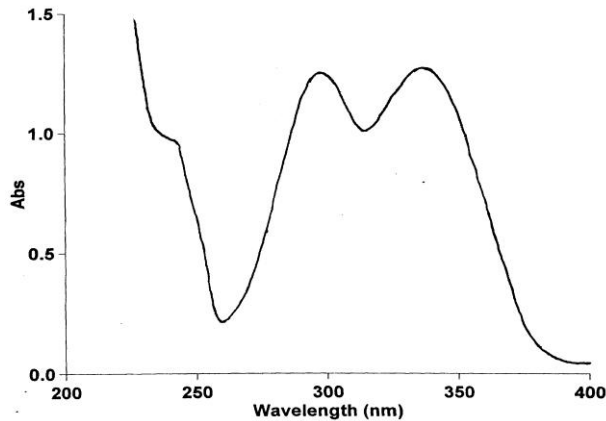
CAS #: 3147-75-9

Chemical Structure:



Physical Properties:	Appearance:	White crystalline powder
	Molecular Weight:	323
	Melting Range:	102 - 106°C
	Decomposition Temperature:	> 300°C
	Specific Gravity (25°C):	1.18 g/cm ³
	Solubility (10g/100ml Toluene):	Clear
	Volatile Matter:	< 0.3% Max
	Ash:	< 0.1% Max

Absorption Spectrum:



Solubility at 25°C (g/100ml solvent):

Solvent	Solubility
3-A Alcohol	0.7%
Benzene	65%
n-Butanol	2%
Ethyl Acetate	27.2%
n-Heptane	8.1%
Methylene Chloride	70.9%
Xylene	50%
Water	< 0.01%

Applications:

BLS® 5411 light stabilizer is effective for a broad range of UV absorption. In addition, it is also noted for its low color contribution, low volatility and excellent solubility. BLS® 5411 also provides ultraviolet protection in a wide variety of polymeric systems; particularly in polyesters, polyvinyl chlorides, styrenics, acrylics, polycarbonates and polyvinyl butyral during outdoor weathering. Typical end use applications include molded items, extruded sheets, glazing materials for window lighting, signs, marine and auto applications. Specialty applications for BLS® 5411 include coatings (particularly thermo sets where low volatility is a concern), photographic products, sealants, and elastomeric materials.

Advantages:

- Strong absorption of ultraviolet radiation in the 300-400 nm region
- High degree of photostability
- Low volatility
- Low color contribution
- Excellent solubility

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 recommended loading concentrations range between 0.10% and 1.0% depending on substrate, processing conditions, and long-term stability requirements. Specific loading concentration in polyesters gel coats range between 0.5 and 3.0%. Exact loading must be determined by compositions of the specific polymer system.

Packaging:

BLS® 5411 is available in powder form in a 40kg (88 pound) fiber drum, net weight, with an inner PE liner.

Storage:

This product may be stored up to 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

<u>Existing Regulations</u>	<u>Maximum Concentration</u>	<u>Thickness</u>	<u>Food Allowed</u>	<u>Temperatures Allowed</u>
Ultraviolet light stabilizer for polymers, 178.2010 2-(2-Hydroxy-5-tert-octylphenyl) benzotriazole				
Polycarbonate resins complying with 177.1580	0.5%	no restrictions	Finished resins contact food only under conditions of use E, F, & G outlined in Table 2 of section 176.170	

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