



## BLS® 1710

### Ultraviolet Light Absorber & Stabilizer

**Introduction:** BLS® 1710 is a benzotriazole type ultraviolet light absorber (UVA), imparting good light stability for plastics and other organic polymers. BLS® 1710 protects polymers as well as organic pigments from UV radiation helping to preserve the original appearance and physical integrity of engineered plastics, elastomers, PVC, adhesives, and polyurethanes during outdoor weathering.

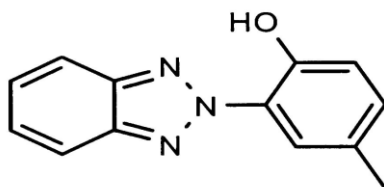
**Material Description:** Benzotriazole Ultraviolet Light Absorber

**Chemical Name:** 2-(2H-Benzotriazole-2-yl)-4-methylphenyl

**Empirical Formula:** C<sub>13</sub>H<sub>11</sub>N<sub>3</sub>O

**CAS #:** 2440-22-4

**Chemical Structure:**



<b>Physical Properties:</b>	Appearance:	White to slightly yellow crystalline powder
	Molecular Weight:	225 g/mol.
	Melting Range:	128 - 132°C
	Flashpoint:	205°C
	Specific Gravity (20°C):	1.38 g/cm <sup>3</sup>
	Vapor Pressure (20°C)	ca. 1.1 x 10 <sup>-6</sup> mm Hg
	Assay:	99% Min.
	Solubility (10 g/100ml Toluene):	Clear
	% Transmittance:	440nm – 97% Min 500nm – 98% Min

**Solubility at 20°C (g/100ml solvent):**

Solvent	Solubility
Acetone	3%
Benzene	7%
Butyl acetate	3%
Carbitol	2%
Chloroform	13%
Dioctyl phthalate	2%
Ethanol	0.3%
Ethyl Acetate	3%
n-Hexane	0.8%
MEK	4%
Methanol	0.2%
Methylene Chloride	16%
Methyl methacrylate	5%
Mineral spirits	1.5%
Styrene	7%
Toluene	6%

**Applications:**

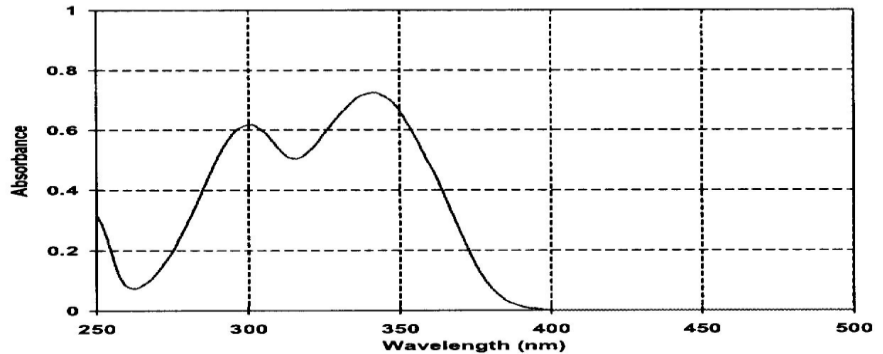
BLS® 1710 features a strong absorption of ultraviolet radiation in the 300-400 nm region. It has a high degree of photostability as its characteristics and structure is unchanged over long periods of light exposure. BLS® 1710 provides ultraviolet protection in a wide variety of polymers including styrene homo- and copolymers, engineering plastics such as polyesters and acrylic resins, polyvinyl chloride, and other halogen containing polymers and copolymers, acetals and some cellulose esters. Elastomers, adhesives, polycarbonate blends, polyurethanes and epoxy materials also benefit from use of BLS® 1710. BLS® 1710 performs synergistically when used in combination with other hindered amine light stabilizers like BLS® 1944.

**Advantages:**

- Strong absorption of ultraviolet radiation in the 300-400 nm region
- High degree of photostability
- Thermally stable to processing temperatures as high as 600°F
- Excellent resistance to oxidizing and reducing agents used in polymerization and curing
- Imparts little or no initial color to substrates
- Does not discolor during light or heat aging
- Exhibits antioxidant and thermal stabilization properties
- Has low oral and dermal toxicity
- Synergistic performance with other stabilizers

**UV Absorption:**

**Absorption Spectrum (10 mg/l, Chloroform)**



**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 0.50% depending on substrate, processing conditions, and long-term stability requirements. Exact loading must be determined by compositions of the specific polymer system. BLS® 1710 may react with various heavy metals ions to form salts or complexes. For instance, if BLS® 1710 comes in contact with iron, or cobalt ions, colored complexes are formed. Reducing and oxidizing agents used in polymerization and curing processes have no effect on the stability of BLS® 1710.

**Packaging:**

BLS® 1710 is available in powder form in a 50 kg (110.2 pound) carton as two 25 kg (55.1 pound) PE bags per carton.

**Storage:**

This product may be stored up to two years 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.

<b>FDA Regulations</b>				
<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'-methylphenyl)benzotriazole				
Acrylic and modified acrylic plastics, semi-rigid and rigid, complying with 177.1010	no restrictions	no restrictions	no restrictions	no restrictions
Rigid polyvinyl chloride and/or rigid vinyl chloride-propylene copolymers complying with 177.1980	0.25%	no restrictions	no restrictions	no restrictions
Ethylene-1,4-cyclohexylene dimethylene terephthalate copolymers complying with 177.1315 and ethylene phthalate polymers complying with 177.1630	0.5%	no restrictions	no restrictions	150°F maximum
Polystyrene complying with 177.1640	no restrictions	no restrictions	dry foods with the surface having no free fat or oil	no restrictions
Polystyrene and rubber modified polystyrene complying with 177.1640	0.25%	no restrictions	nonalcoholic foods, except when used with fatty foods  Fatty foods: the rubber-modified polystyrene polymers shall contain no less than 90 weight percent of total polymer units derived from styrene monomer	no restrictions
Polycarbonate resins complying with 177.1580	0.5%			room temperature or below fill and storage

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