

## EJ-299-15 Cerenkov Radiator Plastic

This is a crystal clear plastic having a blue-violet fluorescence. It is intended for shifting the UV component of Cerenkov light to the visible region for purposes of improved detection with standard photomultipliers. The EJ-299-15 emitted light is isotropic in nature. There is almost no scintillation component present in this plastic.

EJ-299-15 consists of cast acrylic plastic PMMA, polymethylmethacrylate, containing a wavelength shifting fluorescent additive for converting UV light to the blue light typical of standard blue plastic scintillators. The base plastic is formulated from highly purified monomer free of any of the trace UV-absorbing additives used in standard commercial acrylic plastics. The formula is the same as used in the waveshifter plates fabricated for the Kamiokande neutrino detector.

The fluorescent dopant has very little self-absorption overlap onto its emission spectrum, and hence, the plastic has a long optical technical attenuation length typically in excess of 4 meters.

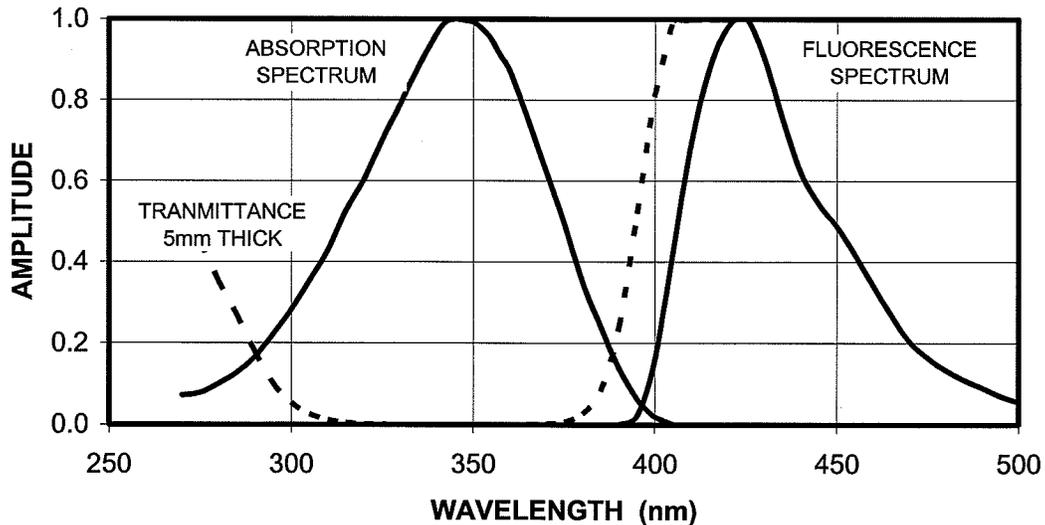
**Physical and Constants:**

Waveshifting quantum efficiency .....	84%
Wavelength of Max. Emission, nm .....	425
Decay Time, ns .....	1.9ns
No. of H Atoms per cm <sup>3</sup> , x 10 <sup>22</sup> .....	3.64
No. of C Atoms per cm <sup>3</sup> , x 10 <sup>22</sup> .....	5.82
No. of O Atoms per cm <sup>3</sup> , x 10 <sup>22</sup> .....	1.46
No. of Electrons per cm <sup>3</sup> , x 10 <sup>23</sup> .....	3.93
Density, g/cc: .....	1.21

<b>Polymer Base:</b> .....	Polymethylmethacrylate	<b>Coefficient of Linear</b>	
<b>Refractive Index:</b> .....	1.49	<b>Expansion:</b> .....	6-9 x 10 <sup>-5</sup> below +80°C
<b>Vapor Pressure:</b> .....	Is vacuum-compatible		

**Chemical Compatibility:** Is attacked by aromatic solvents, chlorinated solvents, ketones, solvent bonding cements, etc. It is stable in water, dilute acids and alkalis, lower alcohols and silicone greases. It is safe for use with most epoxies and "super glues".

### EJ-299-15 OPTICAL SPECTRA



**ELJEN TECHNOLOGY**  
 PO Box 870, 300 Crane Street  
 Sweetwater TX 79556 USA

Tel: (325) 235-4276 or (888) 800-8771  
 Fax: (325) 235-2872  
 Website: [www.eljentechnology.com](http://www.eljentechnology.com)