

## EJ-296 PLASTIC SCINTILLATOR "PAINT"

EJ-296 is a solution of plastic scintillator materials dissolved in the solvent xylene to form a paint for fabricating ultra-thin films or for applying directly to a customer's support surface. Scintillator film as thin as 0.1 micrometer can be made by forming the films on a water surface. Spin casting techniques have also been used successfully to form films of well controlled thickness. EJ-296 is a moderately viscous solution which may be applied as received. It may also be thinned by the addition of additional solvent for making thinner films.

The fluor system of EJ-296 has been formulated specifically for the fabrication of thin films with two specific considerations in mind: (1) Vacuum compatibility and (2) maximum shifting of the primary scintillation light in thin films. Because the base solvent is xylene, care should be taken in handling and storing EJ-296 with regard to potential flammability, and good ventilation maintained in the working area.

### Physical and Scintillation Constants:

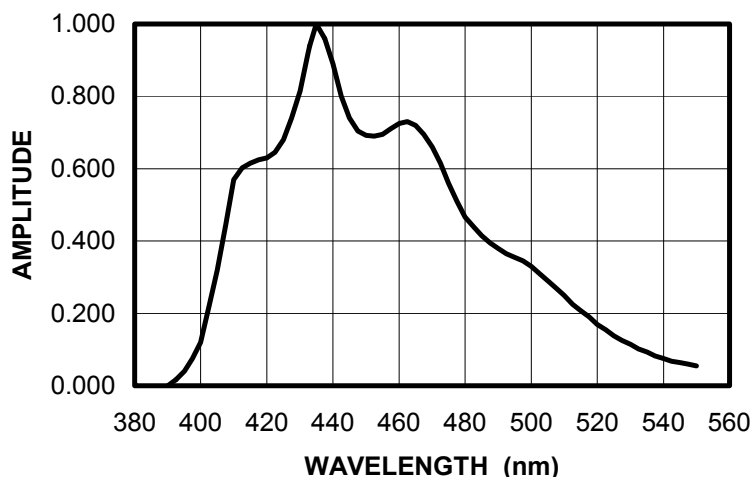
Light Output, % Anthracene .....	60
Scintillation Efficiency, photons/1 MeV e <sup>-</sup> .....	9,000
Wavelength of Max. Emission, nm .....	435
Rise Time, ns .....	~1.0
Decay Time, ns .....	~2.5
Pulse Width, FWHM, ns .....	~3.5
No. of H Atoms per cm <sup>3</sup> , x 10 <sup>22</sup> .....	5.17
No. of C Atoms per cm <sup>3</sup> , x 10 <sup>22</sup> .....	4.69
No. of Electrons per cm <sup>3</sup> , x 10 <sup>23</sup> .....	3.33
Density, g/cc: .....	1.02

**Polymer Base:** ..... Polyvinyltoluene  
**Refractive Index:** ..... 1.58  
**Vapor Pressure:** ..... Is vacuum-compatible  
**Coefficient of Linear Expansion:** .....  $7.8 \times 10^{-5}$  below +67°C

**Light Output vs. Temperature:**  
At +60°C, L.O. = 95% of that at +20°C  
No change from +20°C to -60°C

**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 to use most epoxies and "super glues" with EJ-296.

**EJ-296 EMISSION SPECTRUM**



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