

## EJ-240 PLASTIC SCINTILLATOR

This plastic scintillator has an unusually long principal decay time, 285 ns. Its primary application is to be used in combination with standard organic scintillators having typical decay times near 2 ns. Such "phoswich" detectors are usually constructed with the fast and slow scintillators combined to form one optical element viewed by a single photomultiplier with pulse shape discrimination electronics employed to identify the different pulses. The fast front scintillator is usually relatively thin providing dE/dX information while the slow rear scintillator is slow relatively thick to provide the full energy signal. The PMT is mounted on the slow scintillator, and the fast pulse is easily identified since it undergoes little degradation while passing through the slow one.

A green emitting variant, EJ-240G, is also available with emission maximum at 490nm.

### Physical and Scintillation Constants:

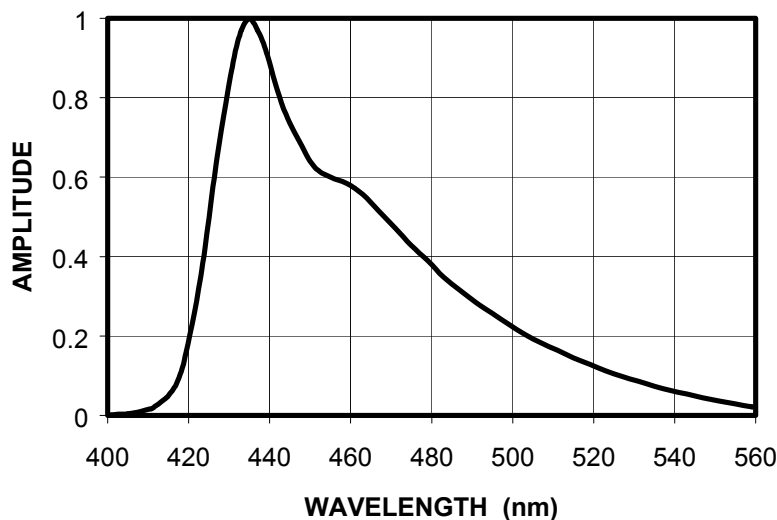
Light Output, % Anthracene .....	41
Scintillation Efficiency, photons/1 MeV e <sup>-</sup> .....	6,300
Wavelength of Max. Emission, nm .....	435
Decay Time, ns .....	285
No. of H Atoms per cm <sup>3</sup> , x 10 <sup>22</sup> .....	5.19
No. of C Atoms per cm <sup>3</sup> , x 10 <sup>22</sup> .....	4.68
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-240.

### EJ-240 EMISSION SPECTRUM



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