

# FAST TIMING PLASTIC SCINTILLATOR

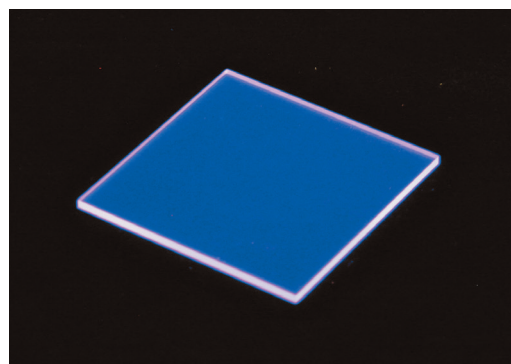
## EJ-228, EJ-230

These plastic scintillators are intended for very fast timing applications or when very high pulse pair resolution is required. The use of light guides is best avoided.

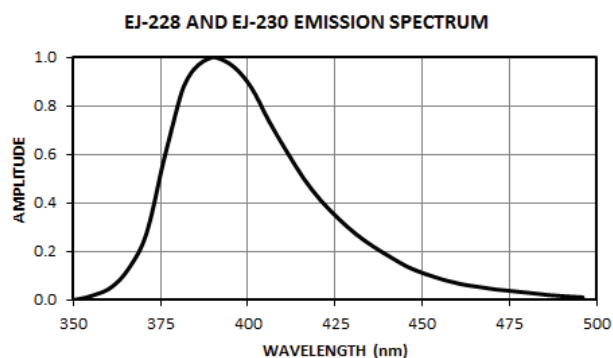
**EJ-228** should be used in small sizes for the best timing results, with the largest scintillator dimension less than 10 cm to minimize photon scattering effects. This scintillator is particularly useful where very high count rates are present.

**EJ-230** is a variant on the optimized EJ-228 formula for applications where a detector dimension must exceed 10 cm. The mean free path of the scintillation emission spectrum is typically 100 cm. Scintillators up to 50 cm can be employed with good timing and light collection results. This scintillator is particularly useful where very high count rates are present.

PROPERTIES	EJ-228	EJ-230
Light Output (% Anthracene)	67	64
Scintillation Efficiency (photons/1 MeV e <sup>-</sup> )	10,200	9,700
Wavelength of Maximum Emission (nm)	391	391
Light Attenuation Length (cm)	-	120
Rise Time (ns)	0.5	0.5
Decay Time (ns)	1.4	1.5
Pulse Width, FWHM (ns)	1.2	1.3
H Atoms per cm <sup>3</sup> (×10 <sup>22</sup> )	5.15	5.15
C Atoms per cm <sup>3</sup> (×10 <sup>22</sup> )	4.69	4.69
Electrons per cm <sup>3</sup> (×10 <sup>23</sup> )	3.33	3.33
Density (g/cm <sup>3</sup> )	1.023	1.023



Polymer Base	Polyvinyltoluene
Refractive Index	1.58
Softening Point	75°C
Vapor Pressure	Vacuum-compatible
Coefficient of Linear Expansion	7.8 × 10 <sup>-5</sup> below 67°C
Temperature Range	-20°C to 60°C
Light Output (L.O.) vs. Temperature	At 60°C, L.O. = 95% of that at 20°C No change from -60°C to 20°C



### CHEMICAL COMPATIBILITY

Attacked By: Aromatic solvents, Chlorinated solvents, Ketones, Solvent bonding cements, etc.

Stable In: Water, Dilute acids and alkalis, Lower alcohols, Silicone greases.

It is safe to use most epoxies with these scintillators.

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