

LONG DECAY TIME PLASTIC SCINTILLATOR

EJ-240

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 relatively thick to provide the full energy signal. Although the photomultiplier tube is mounted on the surface of the slow scintillator, the pulse from the fast scintillator is easily identified since it undergoes little degradation while passing through the slow scintillator.

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

PROPERTIES	EJ-240
Light Output (% Anthracene)	41
Scintillation Efficiency (photons/1 MeV e ⁻)	6,300
Wavelength of Maximum Emission (nm)	430
Light Attenuation Length (cm)	240
Decay Time (ns)	285
H Atoms per cm ³ (×10 ²²)	5.19
C Atoms per cm ³ (×10 ²²)	4.68
Electrons per cm ³ (×10 ²³)	3.33
Density (g/cm ³)	1.023

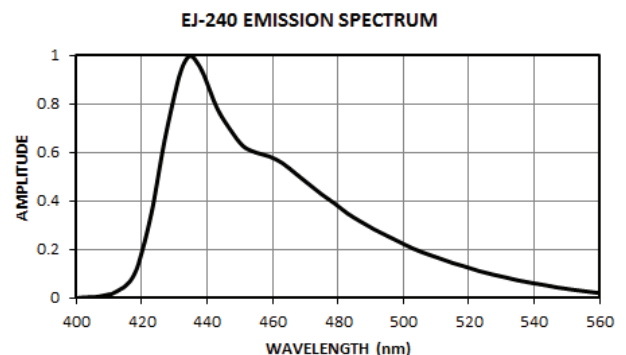
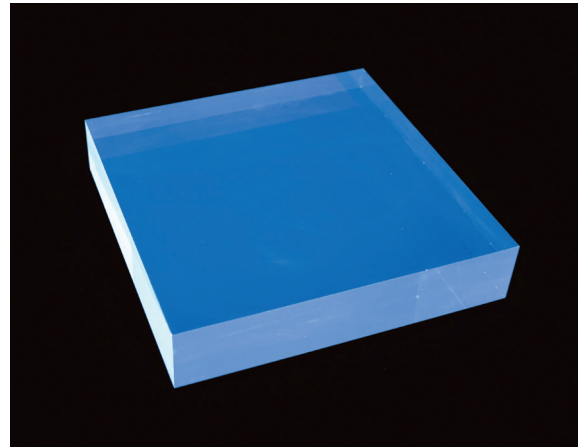
Polymer Base	Polyvinyltoluene
Refractive Index	1.58
Softening Point	75°C
Vapor Pressure	Vacuum-compatible
Coefficient of Linear Expansion	7.8 × 10 ⁻⁵ below 67°C
Temperature Range	-20°C to 60°C
Light Output (L.O.) vs. Temperature	At 60°C, L.O. = 95% of that at 20°C No change from -60°C to 20°C

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 this scintillator.



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