

## EJ-309 LIQUID SCINTILLATOR PULSE-SHAPE DISCRIMINATION PROPERTIES

This new liquid scintillator has been developed as an alternate to the more commonly used PSD liquid scintillators and is formerly known as EJ-399-06. The most well-known scintillator providing neutron-gamma discrimination is NE-213, and Eljen manufactures an identical equivalent, EJ-301. These are based on the solvent xylene which exhibits a high degree of solvent action and, with a flash point at 77°C, is rated as a flammable liquid. EJ-309 provides just slightly poorer PSD characteristics but does possess a number of chemical properties recommending it for use in environmentally difficult conditions.

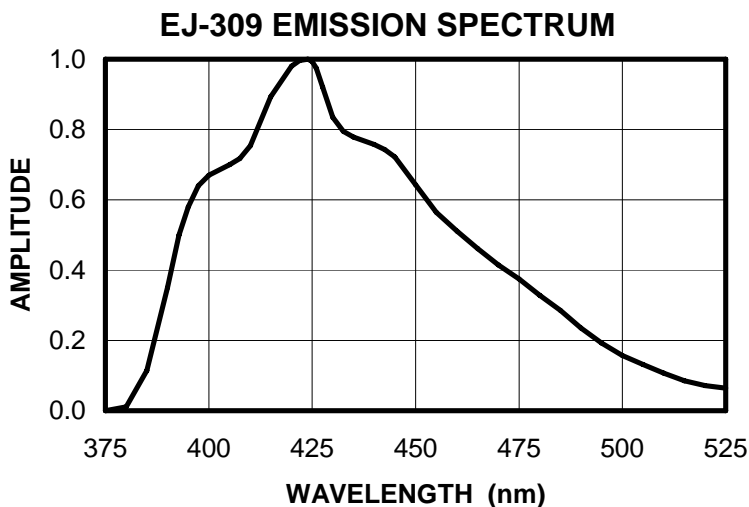
- High flash point
- Low vapor pressure
- Low chemical toxicity
- Compatibility with cast acrylic plastics

### PROPERTIES

Light Output (% of Anthracene)	75%
Photons produced by a 1 MeV electron	11,500
Wavelength of Maximum Emission	424 nm
Decay Time, Short Component	approx. 3.5 ns
Bulk Light Attenuation Length	>1 meter
Specific Gravity (15°C)	0.964
Refractive Index $n_D$	1.57
Flash Point	144°C (291°F)
Boiling Range	(290-300°C)
Vapor Pressure (20°C)	0.002 mm Hg

### ATOMIC COMPOSITION

No. of H Atoms per cm <sup>3</sup>	$5.46 \times 10^{22}$
No. of C Atoms per cm <sup>3</sup>	$4.37 \times 10^{22}$
H:C. Ratio	1.25
No. of Electrons per cm <sup>3</sup>	$3.17 \times 10^{23}$



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