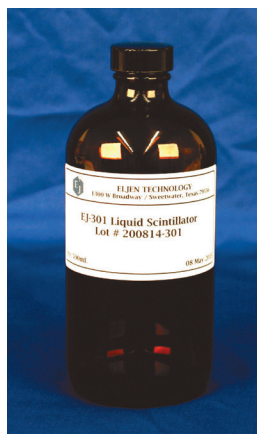


# NEUTRON/GAMMA PSD LIQUID SCINTILLATOR

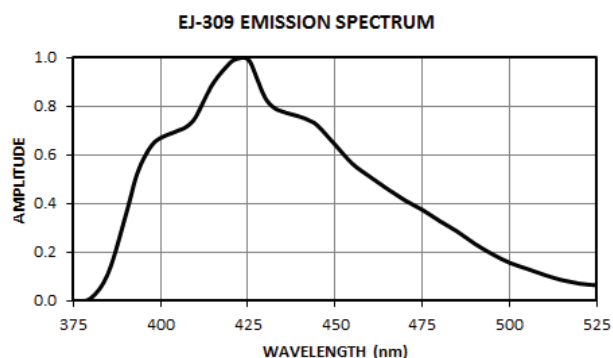
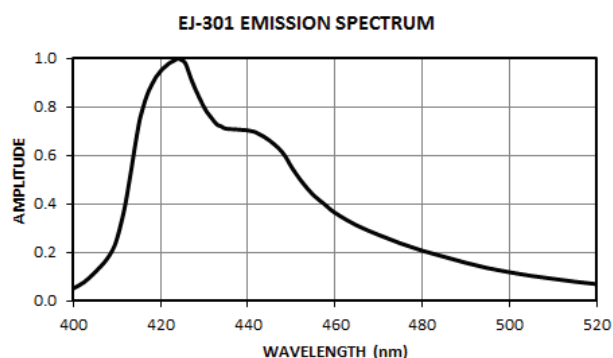
## EJ-301, EJ-309

**EJ-301** exhibits excellent pulse shape discrimination (PSD) properties, particularly for fast neutron counting and spectrometry in the presence of gamma radiation. It is identical to the widely reported NE-213 and exhibits all of the properties of that scintillator.

**EJ-309** has been developed as an alternate to the more commonly used low-flash point PSD liquid scintillators based on the solvent xylene. With a flash point of 144°C, it eliminates the fire hazard associated with low-flash point liquid scintillators. While EJ-309 provides slightly poorer PSD characteristics than that of EJ-301, EJ-309 possesses a number of chemical properties recommending it for use in environmentally difficult conditions. These properties include: high flash point, low vapor pressure, low chemical toxicity, and compatibility with cast acrylic plastics. EJ-309 is also available loaded with natural boron as EJ-309B.



PROPERTIES	EJ-301	EJ-309
<b>Light Output</b> (% Anthracene)	78	80
<b>Scintillation Efficiency</b> (photons/1 MeV e <sup>-</sup> )	12,000	12,300
<b>Wavelength of Maximum Emission</b> (nm)	425	424
<b>Decay Time, Short Component</b> (ns)	3.2	~ 3.5
<b>Mean Decay Times of First 3 Components</b> (ns)	3.16 32.3 270	-
<b>Bulk Light Attenuation Length</b> (m)	2.5 - 3	> 1
<b>Specific Gravity</b>	0.874	0.959
<b>Refractive Index</b>	1.505	1.57
<b>Flash Point</b> (°C)	26	144
<b>Boiling Point</b> (°C at 1 atm)	141	290 - 300
<b>Vapor Pressure</b> (mm Hg, at 20°C)	6	0.002
<b>H Atoms per cm<sup>3</sup></b> (×10 <sup>22</sup> )	4.82	5.43
<b>C Atoms per cm<sup>3</sup></b> (×10 <sup>22</sup> )	3.98	4.35
<b>Electrons per cm<sup>3</sup></b> (×10 <sup>23</sup> )	2.27	3.16



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