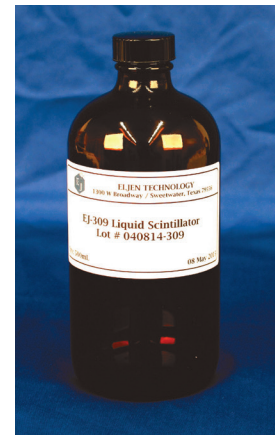


NEUTRON/GAMMA PSD LIQUID SCINTILLATOR

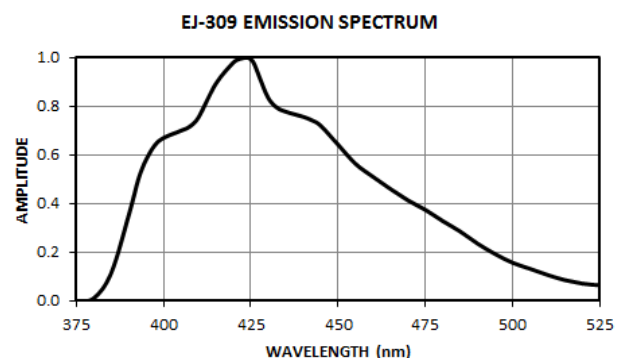
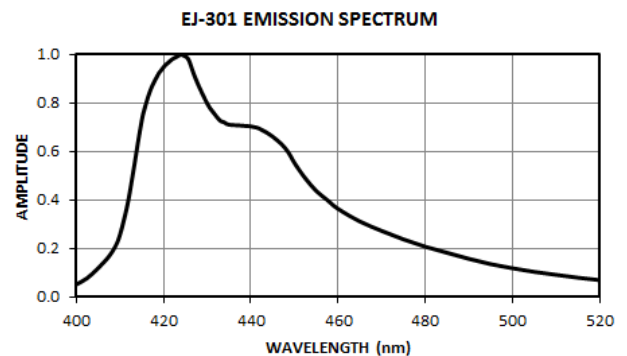
EJ-301, EJ-309

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 |
|--|---------------------|-----------|
| Light Output (% Anthracene) | 78 | 80 |
| Scintillation Efficiency (photons/1 MeV e ⁻) | 12,000 | 12,300 |
| Wavelength of Maximum Emission (nm) | 425 | 424 |
| Decay Time, Short Component (ns) | 3.2 | 3.5 |
| Mean Decay Times of First 3 Components (ns) | 3.16 32.3 270 | - |
| Bulk Light Attenuation Length (m) | 2.5 - 3 | > 1 |
| Specific Gravity | 0.874 | 0.959 |
| Refractive Index | 1.505 | 1.57 |
| Flash Point (°C) | 26 | 144 |
| Boiling Point (°C at 1 atm) | 141 | 290 - 300 |
| Vapor Pressure (mm Hg, at 20°C) | - | 0.002 |
| H Atoms per cm³ (×10 ²²) | 4.82 | 5.43 |
| C Atoms per cm³ (×10 ²²) | 3.98 | 4.35 |
| Electrons per cm³ (×10 ²³) | 2.27 | 3.16 |



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