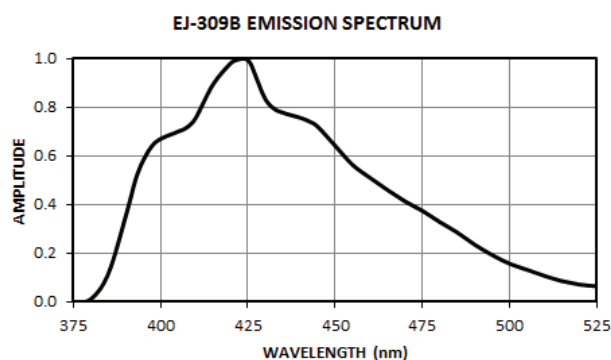


BORON LOADED LIQUID SCINTILLATOR EJ-309B

EJ-309B is a variant of EJ-309 loaded with natural boron. Loadings up to 5% by weight of natural boron are available. EJ-309B has most of the same general properties as EJ-309. The atomic compositions of three different loading levels are given below.



| PROPERTIES | EJ-309B (% boron) | | |
|---|-------------------|-----------|-----------|
| | -5% | -2.5% | -1% |
| Natural Boron Content (% w/w) | 5 | 2.5 | 1 |
| Light Output (% Anthracene) | 57 | 64 | 69 |
| Scintillation Efficiency (photons/1 MeV e-) | 8,800 | 9,800 | 10,600 |
| Wavelength of Maximum Emission (nm) | 424 | 424 | 424 |
| Decay Time, Short Component (ns) | ~ 3.5 | ~ 3.5 | ~ 3.5 |
| Bulk Light Attenuation Length (m) | > 1 | > 1 | > 1 |
| Specific Gravity | 0.963 | 0.964 | 0.965 |
| Refractive Index | 1.57 | 1.57 | 1.57 |
| Flash Point (°C) | 144 | 144 | 144 |
| Boiling Point (°C at 1 atm) | 290 - 300 | 290 - 300 | 290 - 300 |
| Vapor Pressure (mm Hg, at 20°C) | 0.002 | 0.002 | 0.002 |
| H Atoms per cm ³ (×10 ²²) | 5.40 | 5.43 | 5.44 |
| C Atoms per cm ³ (×10 ²²) | 4.13 | 4.25 | 4.33 |
| ¹⁰ B Atoms per cm ³ (×10 ²⁰) | 5.34 | 2.68 | 1.07 |
| Electrons per cm ³ (×10 ²³) | 3.16 | 3.17 | 3.17 |
| ¹⁰ B/H Ratio of Linear Attenuation Coefficient for Thermal Neutron Capture | 125 | 62.4 | 25.1 |

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