SCIONIX

EJ-309 Liquid Scintillation Detectors

EJ-309 liquid scintillation detectors for fast neutrons and gamma rays

Detectors with the EJ-309 liquid scintillator, which has a flash point of 144 °C and is not listed as dangerous goods. Neutrons and gamma rays are separated by pulse shape discrimination. The cell is hermetically sealed with an expansion reservoir and keeps full optical contact in every orientation. Also available boron-loaded as EJ-309:B5.



Pulse shape discrimination
Neutron/gamma separation by PSD, just slightly inferior to EJ-301 [1]

Active volume
Examples: 51 x 51 mm, 76 x 76 mm and 150 x 150 x 150 mm [2]

Flash point
144 °C; not listed as dangerous goods [1]

Specifications

DETECTOR

Scintillator	EJ-309 liquid scintillator; optionally boron-loaded EJ-309:B5 (up to 5% natural boron)	[1]
Active volume	Examples: 51 x 51 mm, 76 x 76 mm and 150 x 150 x 150 mm	[2]
Light sensor	Fast photomultiplier tubes (2–3 ns rise time) with transistorised voltage dividers at negative high voltage	[2]

ELECTRONICS & SIGNAL

Pulse shape discrimination	Neutron/gamma separation by PSD, just slightly inferior to EJ-301	[1]
Light output relative to anthracene	75% (EJ-309:B5: 52%)	[1]

GENERAL

Format	Hermetically sealed cell with expansion reservoir; 100% optical contact between liquid and window in every orientation	[2]
Light yield	11,500 photons/MeV (electrons); EJ-309:B5 approx. 8,000	[1]
Emission maximum	424 nm	[1]
Density	0.964 g/cm³ at 15 °C (EJ-309:B5: 0.963 g/cm³)	[1]
Flash point	144 °C; not listed as dangerous goods	[1]
Decay time	Approx. 3.5 ns (short component)	[1]
Refractive index	1.57	[1]

Sources

[1] High flashpoint EJ-309 liquid scintillation detectors
Scionix · datasheet · p. 1; p. 1, table · checked 2026-11-26
https://scionix.nl/wp-content/uploads/2017/07/High-flashpoint-EJ-309-liquid-scintillation-detectors.pdf

[2] Examples of standard detector configurations
Scionix · product-page · Liquid Scintillation detectors · checked 2026-11-26
https://scionix.nl/standard/

Every value is taken from the manufacturer’s own document; the number after the value refers to the source list. Always check against the latest datasheet before ordering.

The data comes from the manufacturer’s published documents. Manufacturers may change specifications; the current configuration and performance are confirmed in the quotation.