

Physical Constants of Plastic Scintillators

Scintillator	Light Output, % Anthracene ¹	Wavelength of Maximum Emission nm	Decay Constant Main Component ns	Typical Light Attenuation Length cm	H : C Atomic Ratio	Refractive Index	Softening Point °C	Density	Principal Applications
EJ-200	64	425	2.1	380	1.104	1.58	75	1.02	Best overall properties, TOF Counters, large area, p+, e-, etc.
EJ-204	68	408	1.8	160	1.107	1.58	75	1.02	Good general properties
EJ-208	60	434	3.3	400	1.104	1.58	75	1.02	Large area, protons, electrons, etc.
EJ-212	65	423	2.4	250	1.103	1.58	75	1.02	General Purpose, Thin Films
EJ-228	67	391	1.4			1.58		1.02	Very fast timing, high pulse pair resolution
EJ-230	64	391	1.5			1.58		1.02	Variant EJ-228 optimized for detector dimensions over 10 cm
EJ-232	55	370	1.4	N/A	1.102	1.58	75	1.023	Ultra fast timing
EJ-232Q (0.5%)	19	370	700ps	N/A	1.102	1.58	75	1.023	Ultra fast timing, Quenched with Benzophenone for Shortening timing properties to achieve high counting
EJ-240	41	435	~230	240	1.109	1.58	75	1.02	Long decay time, phoswich detectors
EJ-244	56	434	3.3	380	0.995	1.58	100	1.02	Elevated temperatures, general purpose
EJ-248	54	425	2.1	350	0.995	1.58	100	1.02	Elevated temperatures, general purpose
EJ-252	46	423	2.4	N/A	1.098	1.58	75	1.037	Dosimetry, air-equivalent
EJ-254 (5%)	48	425	2.2		1.167	1.58	75	1.026	Boron Loaded, Fast Neutron Spectroscopy
EJ-256	32	425	2.1	N/A	1.134	1.58	75	1.08	Lead-Loaded, (5% standard), X-ray Dosimetry
EJ-260	60	490	9.2	N/A	1.102	1.58	75	1.02	Green Emitting, Longer wavelengths, Solid State Photosensors
EJ-264	50	580	16.8	N/A	1.105	1.58	75	1.023	Orange emitting, Longer wavelengths, Solid State Photosensors
EJ-299-07		435	2	N/A	1.123	1.58	70	1.02	Ultra thin Films (5 microns to 25 microns)

¹ 1 MeV of energy deposited in EJ-200 from an energetic electron produces approximately 10,000 blue photons



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