

Physical properties of the most common scintillation materials

Material	Density (g/cm ³)	Emission Maximum (nm)	Decay Constant (1)	Refractive Index (2)	Conversion Efficiency (3)	Hygroscopic
Nal(Tl)	3.67	415	0,23 µs	1.85	100	Yes
Csl(Tl)	4.51	550	0,6/3.4 µs	1.79	45	No
Csl(Na)	4.51	420	0.63 µs	1.84	85	Slightly
Csl(Undoped)	4.51	315	16 ns	1.95	4-6	No
CaF ₂ (Eu)	3.18	435	0.84 µs	1.47	50	No
LaCl ₃ :Ce(0.9)	3.79	350	70 ns	1.90	95-100	Yes
⁶ Li-glass	2.6	390/430	60 ns	1.56	4-6	No
⁶ Li(Eu)	4.08	470	1.4 µs	1.96	35	Yes
BaF ₂	4.88	315 220	0.63 µs/ 0.8 ns	150 1.54	16 5	No
CeBr ₃	5.23	370	18 ns	1.9	130	Yes
YAP(Ce)	5.55	350	27 ns	1.94	35-40	No
LYSO:Ce	7.20	420	50 ns	1.82	70-80	No
BGO	7.13	480	0.3 µs	2.15	15-20	No
CdWO ₄	7.90	470/540	20/5 µs	2.3	25-30	No
PbWO ₄	8.28	420	7 ns	2.16	0.20	No
Plastics	1.023	375-600	ns range	1.58	25-30	No

(1) Effective average decay time for γ-rays.

(2) At the wavelength of the emission maximum

(3) Relative scintillation signal at room temperature for γ-rays when coupled to a photomultiplier tube with a Bi-Alkali photocathode.