

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
CsI(Tl)	4.51	550	0,6/3.4 μs	1.79	45	slightly
CsI(Na)	4.51	420	0.63 μs	1.84	85	yes
CsI(Undoped)	4.51	315	16 ns	1.95	4-6	no
Cs ₂ LiYCl ₆ :Ce (CLYC)	3.31	275-450 nm	1,50,1000 ns	1.81	30-40	yes
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	1.50 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.