Scintillation materials and their most common applications

Materials	Important Properties	Major Application
NaI(Tl)	Very high light output, good energy resolution	General scintillation counting, Health Physics, environmental monitoring, high temperature use
CsI(Tl)	Non-hygroscopic, rugged	Particle and high energy physics, general radiation detection, photo diode readout, phoswiches
CsI(Na)	High light output, rugged	Geophysical, general radiation detection
CsI(undoped)	Fast, non-hygroscopic	Physics (calorimetry)
CaF_2(Eu)	Low Z, high light output	β detectors, α/β phoswiches
$LaCl_3$:Ce(0.9)	Very high light output, very good energy resolution	High resolution scintillation spectroscopy, Health Physics environmental monitoring
$CeBr_3$	Very high light output, very good energy resolution, low background	High resolution spectroscopy, low background applications
^{6}LiI(Eu)	High neutron cross-section, high light output	Thermal neutron detection and spectroscopy
^{6}Li-glass	High neutron cross section, non-hygroscopic	Thermal neutral detection
BaF_2	Ultra-fast sub-ns UV emission	Positron life time studies, physics research, fast timing
YAP(Ce)	High light output, low Z, fast	MHz-X-ray spectroscopy, synchrotron physics
LYSO	High density and Z, fast	Physics research, PET, High Energy Physics
BGO	High density and Z	Particle physics, geophysical research PET, anti-Compton spectrometers.
$CdWO_4$	Very high density, low afterglow Slow decay times	DC measurement of X-rays (high intensity), readout with photodiodes, Computerized Tomography (CT)
$PbWO_4$	Fast, high density, low afterglow	Physics research (calorimetry)
Plastics	Fast, low density and Z high light output	General counting, particle and neutron detection.