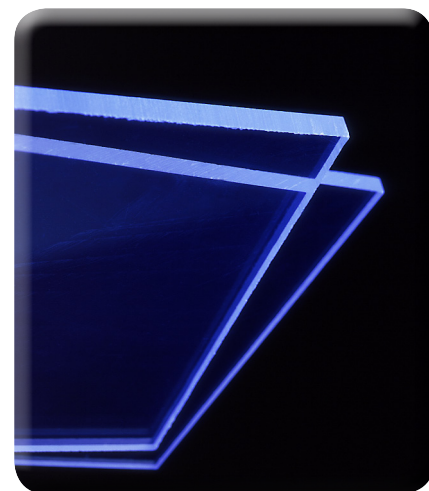


BC-418, BC-420, BC-422

Premium Plastic Scintillators

The premium plastic scintillators described in this data sheet are intended for use in ultra-fast timing and ultra-fast counting applications. BC-418 and BC-422 are recommended for use in small sizes, i.e. when any dimension is less than 4" (100mm). BC-420 is substantially less expensive than BC-418.

	BC-418	BC-420	BC-422
Scintillation Properties			
Light Output, %Anthracene	67	64	55
Rise Time, ns	0.5	0.5	0.35
Decay Time (ns)	1.4	1.5	1.6
Pulse Width, FWHM, ns	1.2	1.3	1.3
Wavelength of Max. Emission, nm	391	391	370
Light Attenuation Length, cm*	NA**	140	NA**
Bulk Light Attenuation Length, cm	100	110	8
Atomic Composition			
No. H Atoms per cc ($\times 10^{22}$)	5.21	5.21	5.19
No. C Atoms per cc ($\times 10^{22}$)	4.74	4.74	4.71
Ratio H:C Atoms	1.100	1.100	1.102
No. of Electrons per cc ($\times 10^{23}$)	3.37	3.37	3.34



*The typical 1/e attenuation length of a 1x20x200cm cast sheet with edges polished as measured with a bi-alkali photomultiplier tube coupled to one end.

** Scintillator recommended for use in small sizes; therefore, the 1/e attenuation length values are not applicable.

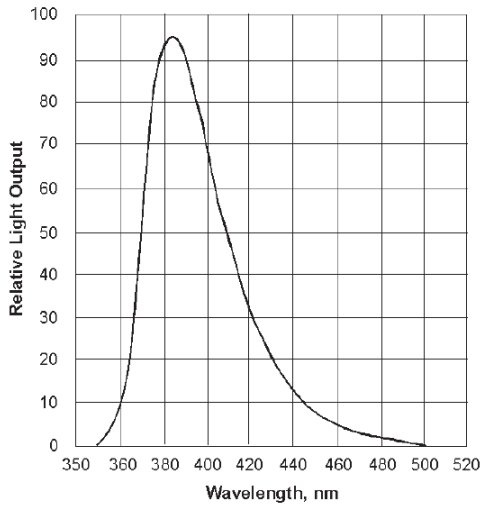
General Technical Data -

Base	Polyvinyltoluene
Density [g/cc]	1.032
Expansion Coefficient (per°C, <67°C)	7.8×10^{-5}
Refractive index	1.58
Softening Point	70°C
Vapor Pressure	May be used in vacuum
Solubility	Soluble in aromatic solvents, chlorinated solvents, acetone, etc. Unaffected by water, dilute acids, lower alcohols, alkalis and pure silicone fluids or grease.
Light Output	At +60°C = 95% of that at +20°C. Independent of temperature from -60°C to +20°C

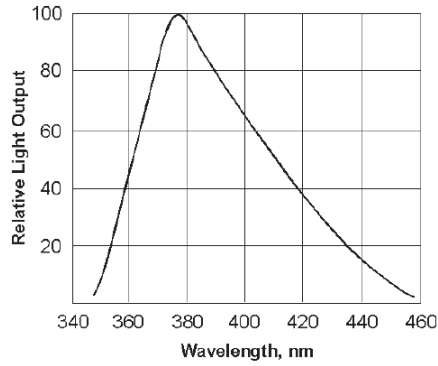
BC-418, BC-420, BC-422 Premium Plastic Scintillators

Emission Spectra

BC-418 & BC-420

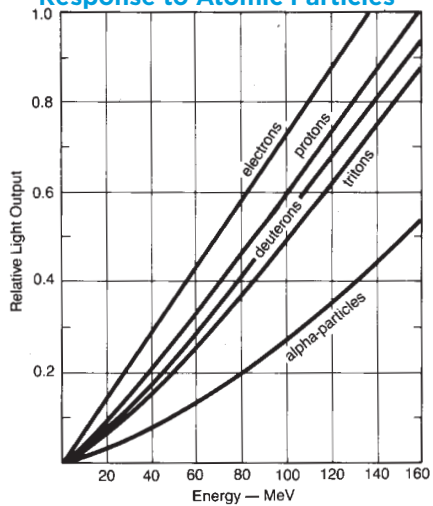


BC-422

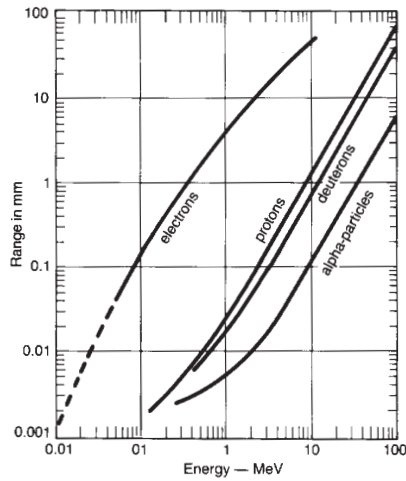


Atomic Particles Response

Premium Plastic Scintillator
Response to Atomic Particles



Range of Atomic Particles in
Premium Plastic Scintillator



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