BC-428
Green-Emitting
Plastic Scintillator

BC-428 is a clear, transparent plastic scintillator with a bright green fluorescence. It is intended for use with photodiodes and charged coupled devices (CCDs) which have optical sensitivities in the green and red portions of the spectrum. Phoswich detectors and other special systems which use optical techniques advantageously for background reduction and selected signal enhancement also may employ BC-428.

Comparing BC-428 to BC-400 scintillator shows that BC-428 has about the same scintillation efficiency. However, its relative light output is 56% of BC-400's with bialkali photocathode PMTs and 85% with S-11 PMTs.

Scintillation Properties –

Light Output, %Anthracene	36
Rise Time (10-90%), ns	1.6
Integral Rise Time (10-90%), ns	30
Decay Time (1/e), ns	12.5
Wavelength of Maximum Emission, nm	480
Light Attenuation Length, 10 mm sheet, cm	150

Atomic Composition –

No. of H Atoms per cc	5.23×10^{22}
No. of C Atoms per cc	4.74×10^{22}
Ratio H:C Atoms	1.103
No. of Electrons per cc	3.37×10^{23}

General Technical Data –

Base ..... Polyvinyltoluene

Density ..... 1.032 g/cc

Refractive Index 1.58

Coefficient of Linear Expansion ..... 7.8×10^{-5} below 67°C

Light Output Temperature Dependence ..... at +60°C = 95% of that at +20°C; independent of temperature from -60°C to +20°C

Vapor Pressure ..... May be used in a vacuum

Solubility ..... Soluble in aromatic solvents, chlorine, acetone, etc. Insoluble in water, dilute acids, lower alcohols, silicone fluid, grease and alkalis.

Softening Point ..... 70°C

SAINT-GOBAIN
CRYSTALS

Scintillation Products
Organic Scintillators

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Emission Spectrum –