

# PLASTIC SCINTILLATOR PAINT

## EJ-296

EJ-296 is a solution of plastic scintillator materials dissolved in a xylene solvent to form a paint for fabricating ultra-thin films or for applying directly to a customer's support surface. Scintillator films as thin as 0.1  $\mu\text{m}$  can be made by forming the films on a water surface. Spin casting techniques have also been used successfully to form films of well controlled thickness. EJ-296 is a moderately viscous solution which may be applied as received. For making thinner films, the paint can be thinned with additional solvent.

The fluor system of EJ-296 has been formulated specifically for the fabrication of thin films with two specific considerations in mind: (1) Vacuum compatibility and (2) maximum shifting of the primary scintillation light in thin films. Because the base solvent is xylene, care should be taken in handling and storing EJ-296 with regard to potential flammability. Always work in a well ventilated area.

PROPERTIES	EJ-296
Light Output (% Anthracene)	60
Scintillation Efficiency (photons/1 MeV e <sup>-</sup> )	9,000
Wavelength of Maximum Emission (nm)	435
Rise Time (ns)	~ 1.0
Decay Time (ns)	~ 2.5
Pulse Width, FWHM (ns)	~ 3.5
H Atoms per cm <sup>3</sup> ( $\times 10^{22}$ )	5.17
C Atoms per cm <sup>3</sup> ( $\times 10^{22}$ )	4.69
Electrons per cm <sup>3</sup> ( $\times 10^{23}$ )	3.33
Density (g/cm <sup>3</sup> )	1.02

Polymer Base	Polyvinyltoluene
Refractive Index	1.58
Softening Point	75°C
Vapor Pressure	Vacuum-compatible
Coefficient of Linear Expansion	$7.8 \times 10^{-5}$ below 67°C
Temperature Range	-20°C to 60°C
Light Output (L.O.) vs. Temperature	At 60°C, L.O. = 95% of that at 20°C No change from -60°C to 20°C

### CHEMICAL COMPATIBILITY

Attacked By: Aromatic solvents, Chlorinated solvents, Ketones, Solvent bonding cements, etc.

Stable In: Water, Dilute acids and alkalis, Lower alcohols, Silicone greases.

It is safe to use most epoxies with this scintillator.



### PACKAGE SIZES

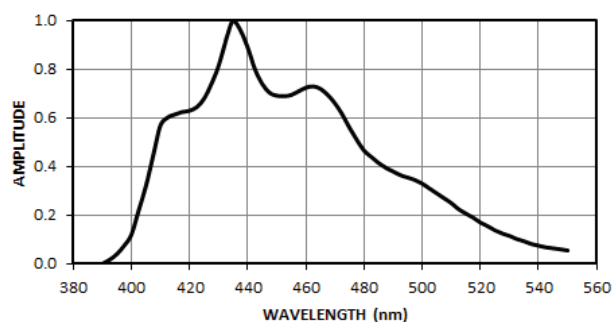
400 mL

800 mL

2.5 L

5 L

EJ-296 EMISSION SPECTRUM



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### ELJEN TECHNOLOGY

1300 W. Broadway, Sweetwater, TX 79556

www.eljentechnology.com • eljen@eljentechnology.com

Toll Free (USA): (888)-800-8771 • Tel: (325)-235-4276 • Fax: (325) 235-0701

