

MINERAL OIL BASED LIQUID SCINTILLATOR

EJ-321L, EJ-321H, EJ-321P, EJ-321S

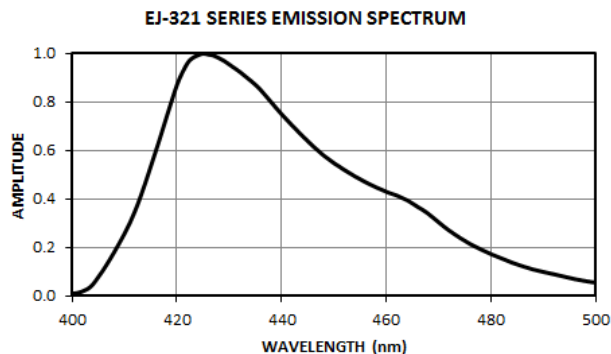
This is a family of four different formulations, EJ-321L, EJ-321H, EJ-321P, and EJ-321S, all based on mineral oil. The main difference between these scintillators is the light output, which varies primarily by the percentage of mineral oil in the various solutions. Other properties which vary with the light output are optical mean free path, flash point and hydrogen-to-carbon ratio. They are recommended for use in large tanks, including acrylic tanks, where lower costs are important.

The tendency for chemical action on container components runs in parallel with the light output. In the construction of acrylic tanks, it is strongly recommended that only cell cast sheet stock, not extruded materials, be employed. Glue joints should be made with solvent action cements and should be annealed afterward. Extruded tubing has been successfully used but only

when the inside walls of the cells have been passivated with a thin coating of polyvinyl alcohol. EJ-321P may also be used in tanks fabricated with gray PVC plastic.



PROPERTIES	EJ-321L	EJ-321H	EJ-321P	EJ-321S
Light Output (% Anthracene)				
Saturated with Nitrogen	39	52	28	66
Saturated with Air	30	40	21	51
Mean Free Path (400-500nm, in m)	> 5	> 5	> 6	> 4
Wavelength of Maximum Emission (nm)	425	425	425	425
Decay Time, Short Component (ns)	2.0	2.0	2.2	2.0
Specific Gravity	0.86	0.86	0.85	0.87
Refractive Index	1.47	1.48	1.47	1.49
Flash Point (°C)	102	81	115	74
H Atoms per cm³ (×10 ²²)	7.37	7.03	7.47	6.48
C Atoms per cm³ (×10 ²²)	3.66	3.72	3.63	3.83
Electrons per cm³ (×10 ²³)	2.93	2.94	2.93	2.94



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