

Liquid Scintillators



The versatility of liquid scintillation detectors provides an excellent means of approaching many problems in the detection of nuclear radiation. For many years, Eljen Technology has provided the greatest variety of liquid scintillators available from any commercial source. The range includes standard liquid scintillators for pulse shape discrimination applications, for internal sample counting or external detection of radiation, and loaded liquids for neutron and gamma detection.

Liquid scintillators can be supplied ready for immediate use encapsulated at the factory in sealed aluminium or glass cells in a variety of types made to the customer's required dimensions. Liquid scintillators in litre quantities are also supplied in bottles or drums sealed under inert gas. All liquid scintillators should be stored in clean, dry, sealed containers under an atmosphere of inert gas. Materials suitable for construction of containers in contact with liquid scintillators are glass, tin-plated steel, chrome steel, stainless steel, aluminium, indium and Teflon®. The stability of each liquid in the presence of other materials should be determined before a large amount of liquid is committed. After being transferred to a cell or tank the scintillator should be deoxygenated by sparging with pure nitrogen or argon for a duration of time proportional to the cell size immediately before sealing in order to achieve excellent PSD performance. Complete detector assemblies are also available which incorporate an aluminium cell and a PMT in a light-tight metal housing.

LIQUID SCINTILLATOR PRODUCTS			
Material	Description/Application	Commercial Equivalents	
		NE	S-G
EJ-301	PSD liquid, fast neutron-gamma discrimination	NE-213	BC-501A
EJ-309	PSD liquid, Fast neutron-gamma discrimination, high flash point, low chemical toxicity, compatible with acrylic plastics	-	-
EJ-309B	Variant of EJ-309 with natural boron loading	-	-
EJ-313	Hydrogen-free, neutron studies	NE-226	BC-509
EJ-315	Deuterated benzene, neutron studies	NE-230	BC-537
EJ-321L	Mineral oil based, large tanks, fast neutron and gamma, cosmics	NE-235L	BC-517L
EJ-321H	Mineral oil based, large tanks, high light output, PSD, fast neutron and gamma discrimination	NE-235H	BC-517H
EJ-321P	Mineral oil based, high flash point, safe to use with grey PVC plastic	-	BC-517P
EJ-321S	Mineral oil based, highest light output of EJ-321 series	-	BC-517S
EJ-325A	Mineral oil based, PSD, fast neutron and gamma discrimination	NE-235C	BC-519
EJ-331	Gd loaded, high light output, fast neutrons, neutrinos	NE-323	BC-521
EJ-335	Gd loaded, mineral oil based, large tanks, fast neutrons, neutrinos	-	BC-525
EJ-339	¹⁰ B loaded, neutron spectrometry, PSD	NE-321A	BC-523A
EJ-351	Dioxane based cocktail for aqueous samples	NE-220	BC-573
Liquid Scintillator Cells and Detector Assemblies			