

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 | | | |