

scintillation glass powders and phosphors for β and γ detection of radio-labelled compounds

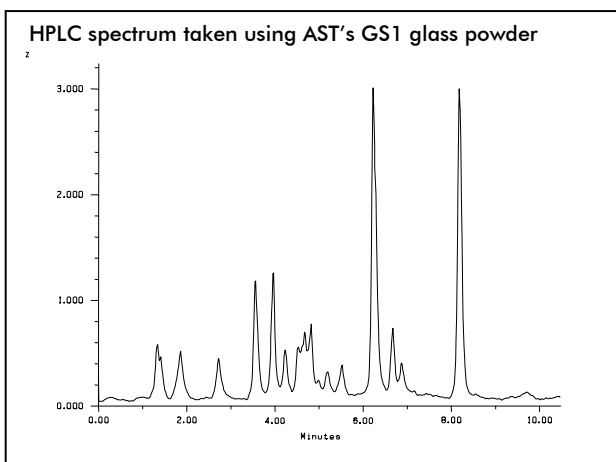
Detection of radio labelled compounds in biological research places high demands on detection systems, particularly when strong solvents are being utilised as might be found in the case of HPLC. Carefully selected phosphor powder and glass powder scintillators offer excellent solutions – with the possibility of being utilised in sheet form, as packing for HPLC columns and even as hosts for protein complexes.

Background

In drug discovery, protein and metabolic assays and general bioscience development, target compounds are routinely labelled with radioactive markers to allow their path and activity to be monitored in biological processes.

In order to detect the weak beta signals produced by the processes, particle size and deposition must be carefully controlled to ensure maximum surface area of scintillator is available to optimise sensitivity.

Choice of scintillator is important – particularly where aggressive solvents or wide variations in temperature may be experienced.



The Applied Scintillation Technologies Solution

Responding to market demand, AST has developed a range of solutions optimised to meet customer requirements.

◆ Scintillation Glass Powders

Extremely robust and available in carefully selected particle size fractions, AST's Ce-doped glass is ideal for packing of HPLC columns for use in more extreme assays - where conventional detectors would fail – being unaffected by solvents and temperature gradients.

Careful particle size selection is essential to maximise liquid flow while presenting the largest possible detector area to the elluent.

Typical performance characteristics for a 200uL cell packed with AST's GS1 scintillator has the following efficiencies

^{14}C	25% for aqueous buffers	^3H	~1% - all solvents
	40% for organic solvents		

◆ Other Powders and Screens

AST produces the largest commercially available screens for a wide range of applications including beta detection. Common phosphors supplied (also in carefully selected particle size fractions) include P47 and CaF:Eu

◆ Ultra Thin Screens

To provide the area detection ability of screens while maintaining the efficiency gained by high surface area – intimate contact of powders, AST has developed and manufactures ultra thin, highly homogeneous screens.

Mounted on 3um Mylar with a mono-layer of approx 3um particles, these screens are the thinnest and highest surface area to volume beta detection screens commercially available.

Applied Scintillation Technologies has the knowledge and expertise based on years of experience to partner you in the development of custom products for beta detection and biological imaging. Resolution, sensitivity, speed & colour of response are a few of the parameters that can be influenced in the production of a customised product that more closely relates to your customer need.

- ◆ A customised product is often a more cost effective solution
- ◆ Formulations can be developed to meet your specific requirements
- ◆ Exceed your initial expectations through partnership development
- ◆ An ISO9002 company – quality assurance is guaranteed through every delivery
- ◆ Product differentiation can provide unique product positioning versus competitors
- ◆ Enjoy continued product development and technical support through partnership

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