SPLITPEA™ ATR MICROSAMPLER **NO. 40402**

Figure 1. The SplitPea™.

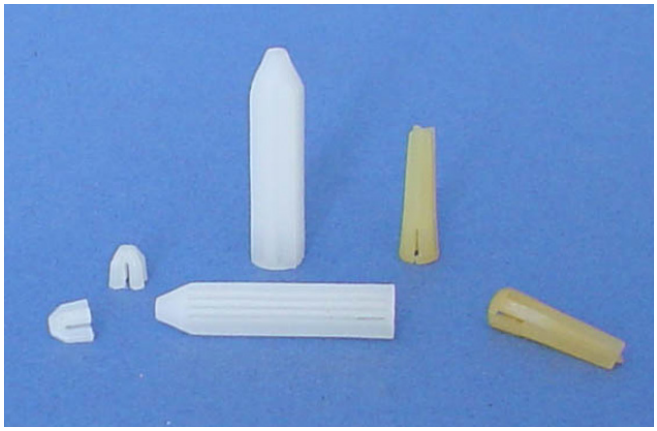

Figure 2.Typical Samples.

A New Tool for Solid-Phase Analysis in Combinatorial Chemistry

Technological advances in the past few years have led to vast changes in the drug discovery paradigm employed by the pharmaceutical industry. One facet of this dramatic change has occurred with the use of combinatorial chemistry on solid-phase supports or resins that allows synthesizing large numbers of compounds very rapidly.

For this technology in general and in the rehearsal phases of combinatorial chemistry synthesis in particular, the ability to follow the progress of multi-step solid-phase reactions is extremely advantageous. Ideally, this should be done directly on the solid-phase thus obviating the tedious cleavage of the synthetic compounds from the solid support. Due to its unique potential to recognize specific functional groups, infrared spectroscopy is not only an excellent tool for following chemical reactions in general, but using Harrick's SplitPea™ accessory (Figure 1), it also specifically allows the monitoring of chemical reactions directly on the polymeric support.

The small spot size (250 mm) of the SplitPea™ makes it uniquely suited to handle the intricate morphologies of the substrates commonly employed in combinatorial chemistry.These include polymer resin beads, SynPhase™* Crowns or SynPhase™ Lanterns (see Figure 2).

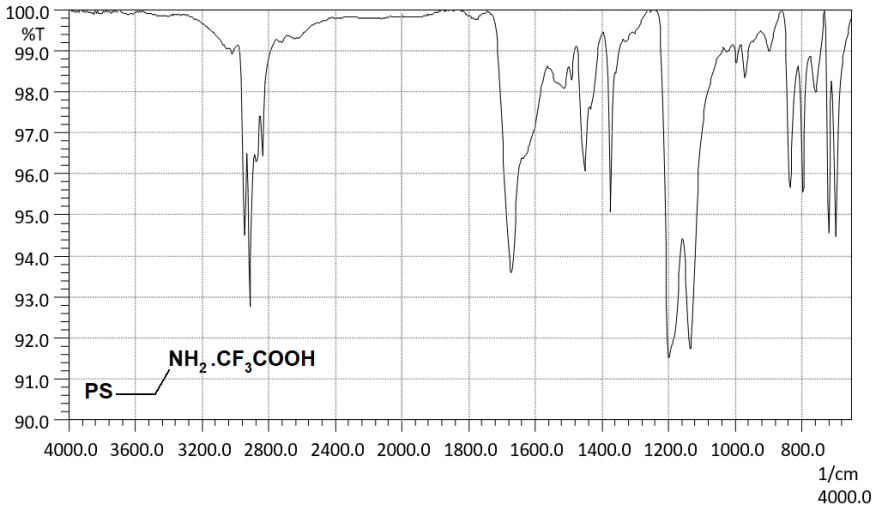

Figure 3.SynPhase™* Lantern Aminomethylated polystyrene, TFA protected.

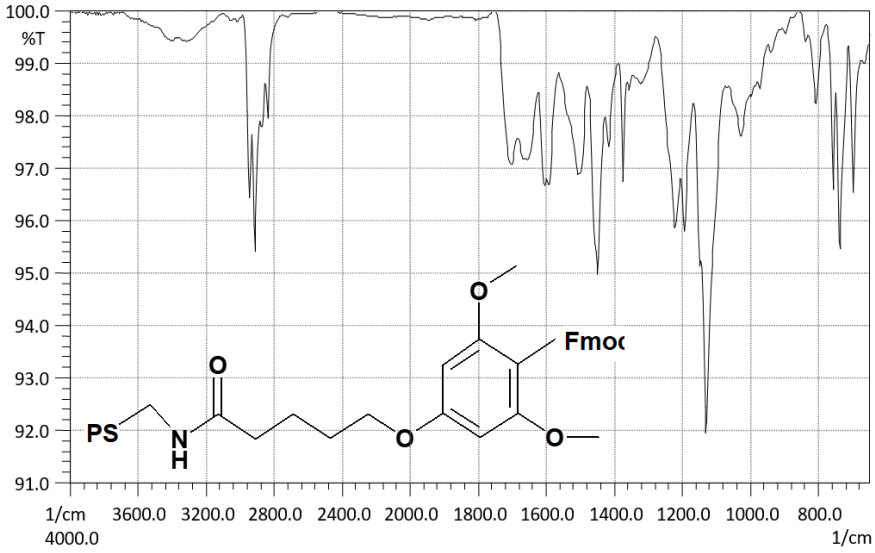

Figure 4: SynPhase™* Lantern polystyrene with PAL-Linker, Fmoc protected.

Due to their specific design and high loading capacity (36 µM per item), these substrates are extremely popular for combinatorial chemistry work.However, they are also very problematic for infrared spectroscopic analysis.

The SplitPea™, however, allows straightforward measurements of the SynPhase™ * Lanterns. The results of such measurements are shown in Figures 3 and 4.

* Registered trademark of Mimotopes Pty. Ltd., Australia.

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