

# The Advantage

Innovators of  
High Resolution  
Chromatography  
Products

## CARBOFRIT™

# Inlet Liner Inserts

### An alternative to glass wool packings for split & splitless injection liners.

- Exhibits excellent inertness for highly active compounds.
- Allows unimpeded inlet flows.
- Provides low inlet liner pressure drop.
- Improves trapping of high molecular weight contaminants.
- Eliminates off gassing or bleed from deactivation.

Packing split/splitless inlet liners with glass or fused silica wool improves sample vaporization, traps non-volatile sample residue, and is necessary for proper operation of fast autosamplers. However, the benefits to analytical systems are sometimes overshadowed by problems such as adsorption of active compounds, variable packing densities, and off gassing or bleed from deactivation agents. Chromatographers have learned to live with these problems because there were no alternatives – until now.

Researchers at Restek developed an alternative material for packing inlet liners that overcomes many of the limitations of glass or fused silica wool. CarboFrit™ inlet liner inserts provide chromatographers with the same advantages as glass wool: improved vaporization and low pressure drop with superior inertness, higher temperature stability, and better trapping of high molecular weight contaminants. The uniform pore size of these frits guarantees consistent flow through the liner.

The CarboFrit™ inserts are available prepacked in 4mm ID split and splitless liners for HP and Varian GCs or individually as replacement packing. They are easy to install into any inlet liner with a 3.5mm or greater ID\* and can be easily replaced if contaminated by dirty sample residue or septum particles. Analysts no longer have to fumble with brittle wool or worry if active sites have been exposed.



*CarboFrit™ packing offers the advantages of glass wool but with superior inertness, higher temperature stability; improved retention of sample contaminants, and more consistent packing densities.*

The inertness of the CarboFrit™ inserts was evaluated with several active classes of compounds including pesticides and phenols. Endrin, a chlorinated pesticide, is a very good indicator of sleeve inertness. It will readily break down to endrin aldehyde and endrin ketone in an active injection system. A 50pg standard of endrin was injected into five different liners packed with CarboFrit™ inserts. Table I (on page 2) shows the endrin breakdown results for these five liners. The average breakdown was less than 3% which is well within the 20% breakdown guidelines required in most EPA protocols.

*\*Liners with IDs less than 3.5mm can be packed on a custom basis.*

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# Spring

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