





# CHROMATOGRAPHIC SPECIALTIES INC.





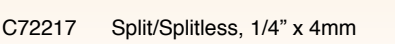
www.chromspec.com

## Technical Note CS07

### CHROMSPEC™ GC Injection Port Liners

- 200 to 300% Increase in Sample Transfer • Permits Use of Glass Wool for Dirty Samples
- Readily Silanized • Improved Reproducibility • Easily Cleaned

CHROMSPEC™ LINERS FOR VARIAN GCs	Replaces OEM
 C72100 Fritted Splitter	16-000830-01
 C72110 Cupped Splitter	N/A
 C72120 Baffled Splitter	16-00829-00
 C72130 Splitless	03-949437-00

CHROMSPEC™ LINERS FOR AGILENT GCs	Replaces OEM
 C72200 Cupped Splitter (unpacked) C72205 Cupped Splitter (packed)	18740-80190 18740-60840
 C72210 Spit/Splitless, 1/4" 4mm (with glass wool)	19251-60540
 C72220 Splitless, 1/4" 2mm	18740-80220
 C72215 Split/Splitless, 1/4" x 4mm Disposable, non-silanized, Pkg. 10	19251-60540
 C72217 Split/Splitless, 1/4" x 4mm Disposable, non-silanized, with glass wool plug, Pkg. 10	

A GC injection port liner serves as an inert environment where a sample can be vaporized prior to introduction onto an analytical column. Liner designs vary according to the type of injection technique used. Being the first part of the sample flow path, it is critical that the liner does not alter the composition of the sample. Liners that are incorrectly deactivated, dirty, broken, or poorly installed can contribute to inferior chromatographic results.

#### Deactivated Liners

Liner deactivation is critical when analyzing active or trace compounds. Undeactivated glass liners expose the sample to metal oxides and silanol groups which can interact with certain pesticides, herbicides, drugs, amines and acids. Total or partial loss of solute (irreversible adsorption) or solute tailing (reversible adsorption) can result from the use of undeactivated liners. Certain pesticides (e.g. endrin) are prone to breakdown in undeactivated liners. Deactivation of the glass surface of the liner involves leaching with an acid, followed by silylation with DMDCS (dimethyldichlorosilane) or similar reagent. Care must be taken in cleaning deactivated liners. Methanol, followed by methylene chloride, hexane and the solvent the sample was in, are recommended for cleaning deactivated liners. Brushes that may scratch the surface and strong acids/bases or soaps/surfactants must be avoided. If the deactivation layer has been damaged, the liner will need to be re-deactivated.

#### Undeactivated Liners

Undeactivated liners can be used successfully for non-active samples such as hydrocarbons. These liners still require frequent cleaning/replacing as dirty samples can quickly contaminate the liner and eventually the column.

#### Liner Maintenance

Dirty or broken liners can cause poor chromatographic results even for non-active solutes. A contaminated liner can adsorb solutes to varying degrees. A cracked or poorly installed liner will result in poor sample transfer onto the column and consequently poor peak shape. Injection port liners should be changed frequently. The exact schedule of liner replacement will depend on the application, however, it is recommended that the liner be replaced whenever a new column is installed.

