



HICHROM

Chromatography Columns and Supplies

GAS CHROMATOGRAPHY GC Inlet Supplies

Catalogue 9

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Inlet Liners

Choosing the optimum inlet liner and injection parameters for a specific application can increase peak areas and reduce detection limits. Characteristics including liner volume, liner treatments and deactivation and liner design are all important. Deactivation procedures are used to produce inert liners with long lifetimes. These are particularly useful for splitless injections or for analysis of polar compounds. Many liner designs use deactivated glass wool packing, placed near the centre of the liner. A small selection of some of the more common designs is illustrated in Figure 1.

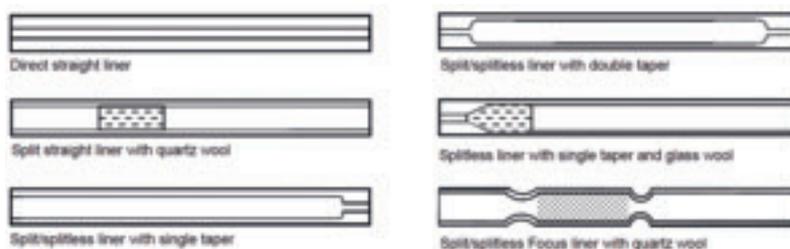


Figure 1. Selection of GC inlet liners

Septa

Septa are available for a variety of different applications and different temperature ranges. Lower temperature septa are generally softer, seal better and can withstand more injections than their higher temperature counterparts. General purpose silicone rubber septa are cost-effective choices, providing low bleed, long lifetime and easy penetration. BTO (Bleed and Temperature Optimized) septa have an extended upper temperature range of 400°C and are ideal for use with low-bleed 'MS' type capillary columns. Various other septa types including PTFE coated silicone, PTFE multi-layer silicone and pre-pierced septa are available. Please enquire for further details.



Ferrules

A comprehensive selection of ferrules is available, made of different materials and configurations for a leak-free connection between the column and the injector. Four main types of ferrules are used with capillary GC columns – graphite, vespel/graphite composites, vespel and stainless steel.

1) Graphite ferrules can be used at temperatures up to 450°C without producing bleed or decomposition products. They are very soft and porous to oxygen, making them suitable for most applications except GC-MS connections.

2) Vespel/graphite (85%/15%) ferrules are mechanically robust, have a long lifetime and are compatible with GC-MS. As they form a strong grip with the column, they cannot be re-used.

3) Vespel is a high temperature polyimide material which is very hard. It has low oxygen permeability making it an excellent sealing material. Vespel ferrules are reusable but are suitable for isothermal operation only.

4) SilTite™ stainless steel ferrules form strong permanent airtight seals with capillary column and MS interface. Unlike other ferrules they do not need re-tightening after installation.



100% Graphite ferrules



SilTite metal ferrules

The properties of these materials are summarised in Table 1.

Table 1

Material	Upper Temp. Limit	Suitable for GC-MS	Re-usable
Graphite (100%)	450°C	No	Yes
Vespel/Graphite (85%/15%)	350°C	Yes	No
Vespel	280°C	Yes	Yes
Stainless steel (SilTite™)	500°C	Yes	No

Please contact Hichrom for ordering information for inlet liners, septa and ferrules and for information on any additional GC accessories.