

GC Ferrules and Septa

Septa and ferrules have an important role in the GC Instrument. Selection of the right products will greatly improve instrument performance. The GC consumables from Thermo Electron Corporation are designed to provide the high level of inertness and reliability required to obtain the sensitivity and reproducibility needed in today's separation laboratory.



Introduction

Although they are small consumables for GC, the quality of ferrules and septums is essential for chromatographic performance. These consumables are in the flow path of the GC and therefore need to be free from contaminants, and have tight dimensional requirements. For this reason the septa and ferrules are supplied in contaminant-free individual blister packs, and one item can be removed at a time without risk of contamination to the other supplied items.

Features and Benefits

100% Graphite Ferrules

- Easy to use
- Provides a stable seal

- Soft material - can be squashed
- Porous to O₂ (not for GC- MS)
- Temperature Limit 450°C
- Forms 'soft' grip with column
- Re-useable

15% Graphite / 85% Vespel® Ferrules

- Mechanically robust
- Hard material, long lifetime
- Temperature limit 350°C
- Must re-tighten after initial temperature cycles
- Forms strong grip with column
- Cannot be re-used with another capillary column
- For GC-MS interface

Ferrule choices

Material Type	Suitable for GC-MS	Temperature Limit (°C)	Can be re-used
Graphite	No	450	Yes
Graphite / Vespel	Yes	350	No
Stainless steel (SilTite™)	Yes	500	No

SilTite™ Metal Ferrules

- SilTite ferrules form a strong, permanent, airtight seal around the capillary column
- The metal SilTite ferrule and nut are made from the same material and therefore have the same thermal expansion coefficient. As the oven heats up and cools down, the nut and ferrule expands and contracts at the same rate, eliminating annoying leaks and the need to re-tighten the ferrule after installation.
- The base of the SilTite ferrule is flat and forms a perfect seal with the MS interface, covering the whole transfer interface.
- Specifically designed non-Swagelock SilTite nuts are characterized by two notches on the outer surface of the nut. The inner taper of the nut corresponds to the angle of the SilTite ferrule, ensuring an even closure of the ferrule around the whole column, eliminating leaks.
- SilTite metal ferrules have a temperature tolerance well above the limit of the injector, MS interface or GC oven.
- SilTite nuts and ferrules are available for most major GC/MS instrument interfaces



Septa choices

Septa Type	Description	Temperature Limit (°C)
TCS	Triple layer with Teflon®	280
CS	Silicone with Teflon®	200
Auto-Sep™	High Grade Silicone	320
Auto-Sep T™	High Grade Silicone with Teflon	350