

GC FERRULES & SEALS



Greyhound Chromatography supplies the most extensive range of ferrules available from any single supplier, manufactured from Vespel[®], Vespel/Graphite, Graphite and PTFE. The ferrule size refers to the size of the compression fitting and the OD of the tubing to be used.



Vespel[®] Ferrules - are made from 100% high-temperature DuPont polyimide with precision drilled ID. Vespel is fairly hard and tends to seal permanently to the column.

Vespel[®]/Graphite (60% Vespel/40% Graphite) Ferrules - are made from quality DuPont polyimide/ graphite blend. Recommended for GC/MS interface applications.

Graphite Ferrules - are made from high purity graphite. Ideal for glass to metal connections because they don't stick to glass. They are reusable, if they are not over tightened.

Vespel[®]/Graphite (85% Vespel/15% Graphite) Ferrules - are made from quality DuPont polyimide/ graphite blend. Recommended for GC/MS interface applications.

PTFE Ferrules - are made of 100% PTFE. They are soft and completely inert.

Ferrule Type	Temp. Limit	Typical Uses	Advantages	Disadvantages
Graphite (100%)	450°C	General purpose for connecting capillary column to injector and detector	<p>Easy to use, can be tightened to hold the column in place without seizing. Column can be readjusted if required</p> <p>Easy removed from column and fitting</p> <p>High temperature limit</p> <p>Most forgiving material to correct connection imperfections</p> <p>Can be re-used</p>	<p>Allows air diffusion. Not suitable for MS or oxygen-sensitive detectors</p> <p>Over tightening can extrude graphite into the inlet or detector. Pieces could flake off and remain in the fitting, which could cause peak tailing and sample losses</p> <p>Soft, easily deformed</p> <p>Can interact with the solvent and causing tailing</p>
Vespel/Graphite	400°C	<p>General purpose, used for capillary and packed glass columns</p> <p>Recommended for MS or oxygen-sensitive detectors</p> <p>Reliable, leak-free connection</p>	<p>Simple and reliable connections</p> <p>Reusable & can be retightened</p> <p>Maintains shape and does not flake off</p> <p>Reasonably forgiving of any connection imperfections</p>	<p>Design is specific to fitting size</p> <p>Will shrink with temperature cycling. Requires re-tightening.</p> <p>Seizes on the column, cannot be re-adjusted, must be cut off</p>
Vespel	350°C	<p>Isothermal operation</p> <p>Reliable seals even with surface imperfections, adjusts to sealing surface</p> <p>Excellent sealing material when making glass or metal connections</p>	<p>Easy reliable connections</p> <p>Reusable & can be retightened</p> <p>Easily removed if used if used at room temperature</p> <p>Low air permeability</p>	<p>Can shrink at elevated temperatures, must re-tighten frequently</p> <p>Using above the recommended temperature limit can cause the material to melt and damage the fitting</p>
Teflon	250°C	<p>External connections not involving carrier gas</p> <p>Valve actuator gas lines</p> <p>Glass packed columns used at low temperatures</p>	<p>Easy connections</p> <p>Can be re-used</p> <p>Very forgiving of connection imperfections</p> <p>Can seal with very little pressure</p>	<p>Not for MS or oxygen-sensitive detectors. Allows air diffusion.</p>