

Ferrules  
**teide** by Teknokroma™





## Ferrules for Gas Chromatography

Ferrules for gas chromatography are used to seal the connections between the column and the injection and detection systems.

The ideal GC column ferrules provide a perfect seal avoiding leaks that would allow the entrance of air and contaminants into the equipment, damage the baseline and increase the background signal.

Ferrules must not stick to the column and must tolerate temperature changes during programming.

### Ferrule selection

General considerations in the ferrule selection:

- Injector temperature
- Type and sensitivity of the detector
- Type of material that provides a perfect seal to avoid leaks
- Column OD and type

### How to avoid problems with ferrules

- Change the ferrules on installing a new column
- Avoid all type of fingers' grease and other contaminants
- Do not overtighten the ferrules. As a general rule, sealing at ¼ turn past fingertight are enough.
- Observe if the reusable ferrules are damaged before using them again.

### When is it necessary to change the ferrules

- When some changes are observed in retention times
- In case of baseline drift caused by the entrance of oxygen and possible reaction with the stationary phase
- When sample loss is observed
- Increase of the detector background signal

## Types of Ferrules

### Graphite

Graphite is the best material to work at high temperature and at the same time is the softest ferrule. Therefore it fits the capillary column and seals effectively at only ¼ turn past fingertight. As this is a very soft material, they are easily destroyed or deformed. Ideal for FID and NPD detectors.

Do not use with MS or other oxygen sensitive detectors. Upper temperature limit 450°C.

### Vespel/Graphite

Vespel /Graphite ferrules are recommended for applications with GC/MS interface or other oxygen sensitive detectors.

The ferrule composition is 60% polyimide and 40% graphite. It is a ferrule for general use in Gas Chromatography.

It is mechanically robust and forms a perfect seal. It is a reusable ferrule. It needs a frequent retightening. Limit temperature 400°C 85% Polyimide (vespel) 15% graphite for Agilent ferrules.

### Vespel

The composition of the Vespel ferrule is 100% polyimide. It is mechanically robust. It can be removed and reused several times. It is an ideal material for glass and metal columns. It needs a frequent retightening. Limit temperature 350°C.

**“If you don't find ferrules you need please let us know”**

## Graphite Ferrules (100%)



### Features:

- Ideal to work with FID and NPD interface applications
- General use to work with capillary columns
- It is the best material to work at high temperatures

### Advantages:

- They seal perfectly in fused silica and glass columns
- They resist highest temperature, 450°C
- Very easy to remove

### Limitations:

- They are easily deformed and can only be reused if they are not tighten in excess
- Not recommended to work with GC/MS detectors

Graphite ferrules, (short ferrules) for Agilent 4890, 5890, 6890 except for GC/MS



Cat.No	Description	For Capillary Column	Pk
TR-T031001	teide 1/16" to 0.4 mm	0.18 mm I.D.	10
TR-T031000	teide 1/16" to 0.5 mm	0.25-0.32 mm I.D.	10
TR-T031010	teide 1/16" to 0.8 mm	0.53 mm I.D.	10

## Graphite standard ferrules



Cat.No	Description	For Capillary Column	Pk
TR-T031020	teide 1/16" to 0.4 mm	0.25 mm I.D.	10
TR-T031030	teide 1/16" to 0.5 mm	0.32 mm I.D.	10
TR-T031040	teide 1/16" to 0.8 mm	0.53 mm I.D.	10
TR-T031042	teide 1/16" to 1.0 mm	0.65 mm I.D.	10

## Graphite standard ferrules (two holes)

Cat.No	Description	For Capillary Column	Pk
TR-T031102	teide 1/16" 2 holes, 0.5/0.5	0.32 mm I.D.	10

## Graphite reducing ferrules



Cat.No	Description	For Capillary Column	Pk
TR-T031104	teide 1/8" to 0.4 mm	0.25 mm I.D.	10
TR-T031106	teide 1/8" to 0.5 mm	0.32 mm I.D.	10
TR-T031108	teide 1/8" to 0.8 mm	0.53 mm I.D.	10
TR-T031110	teide 1/8" to 1/16"	1/16" O.D.	10
TR-T031112	teide 1/4" to 0.5 mm	0.32 mm I.D.	10
TR-T031116	teide 1/4" to 0.8 mm	0.53 mm I.D.	10
TR-T031118	teide 1/4" to 4 mm	4 mm O.D.	10
TR-T031120	teide 1/4" to 6 mm	6 mm O.D.	10
TR-T031122	teide 1/4" to 1/16"	1/16" O.D.	10
TR-T031124	teide 1/4" to 1/8"	1/8" O.D.	10

## Special graphite ferrules for Shimadzu



Cat.No	Description	For Capillary Column	Pk
TR-T031128	teide 5 mm for Shimadzu	5 mm O.D.	10



## Vespel/Graphite Ferrules

### Features:

- Ferrules recommended for GC/MS detectors
- More appropriate ferrules for general use in capillary columns
- Perfect seal

### Advantages:

- Mechanically robust and long life time ferrules
- Reusable ferrules

### Limitations:

- Must be retightened
- Temperature limit 400°C

Vespel/Graphite ferrules, (short ferrules)  
for Agilent 4890, 5890, 6890



Cat.No	Description	For Capillary Column	Pk
TR-T031070	<b>teide</b> 1/16" to 0.4 mm	0.25 mm I.D.	10
TR-T031080	<b>teide</b> 1/16" to 0.5 mm	0.32 mm I.D.	10
TR-T031090	<b>teide</b> 1/16" to 0.8 mm	0.53 mm I.D.	10

Special Vespel/Graphite ferrules (85/15)  
for Agilent 4890, 5890, 6890

Cat.No	Description	For Capillary Column	Pk
TR-T031071	<b>teide</b> 1/16" to 0.4 mm	0.25 mm I.D.	10
TR-T031081	<b>teide</b> 1/16" to 0.5 mm	0.32 mm I.D.	10
TR-T031091	<b>teide</b> 1/16" to 0.8 mm	0.53 mm I.D.	10

Vespel/Graphite  
standard ferrules



Cat.No	Description	For Capillary Column	Pk
TR-T032001	<b>teide</b> 1/16" to 0.3 mm	0.10-0.20 mm I.D.	10
TR-T032000	<b>teide</b> 1/16" to 0.4 mm	0.25 mm I.D.	10
TR-T032010	<b>teide</b> 1/16" to 0.5 mm	0.32 mm I.D.	10
TR-T032020	<b>teide</b> 1/16" to 0.8 mm	0.53 mm I.D.	10

Vespel/Graphite standard ferrules (two holes)

Cat.No	Description	For Capillary Column	Pk
TR-T031150	<b>teide</b> 1/16" 2 holes, 0.4/0.4	0.25 mm I.D.	10
TR-T031152	<b>teide</b> 1/16" 2 holes, 0.5/0.5	0.32 mm I.D.	10

## Vespel Ferrules

### Features:

- The composition is 100% polyamide
- Ideal for applications with isotherm temperature
- They can be reused several times
- Upper temperature limit 350°C

### Advantages:

- Mechanically robust
- Reusable for several column changes

### Limitations:

- Must be frequently retightened
- Do not resist high temperatures
- Leaks in case of temperature programming

Vespel ferrules, (short ferrules) for Agilent 4890, 5890, 6890

Cat.No	Description	For Capillary Column	Pk
TR-T031210	<b>teide</b> short 1/16" to 0.4 mm	0.25 mm I.D.	10
TR-T031212	<b>teide</b> short 1/16" to 0.5 mm	0.32 mm I.D.	10
TR-T031214	<b>teide</b> short 1/16" to 0.8 mm	0.53 mm I.D.	10

Vespel standard ferrules

Cat.No	Description	For Capillary Column	Pk
TR-T031216	<b>teide</b> 1/16" to 0.3 mm	0.10-0.18 mm I.D.	10
TR-T031218	<b>teide</b> 1/16" to 0.4 mm	0.25 mm I.D.	10
TR-T031220	<b>teide</b> 1/16" to 0.5 mm	0.32 mm I.D.	10
TR-T031222	<b>teide</b> 1/16" to 0.8 mm	0.53 mm I.D.	10
TR-T031224	<b>teide</b> 1/16" to 1.0 mm	0.65 mm I.D.	10
TR-T031226	<b>teide</b> 1/16" 2- holes 0.4/0.4 mm	0.25 mm I.D.	10
TR-T031228	<b>teide</b> 1/16" 2- holes 0.5/0.5 mm	0.32 mm I.D.	10