**Ferrules**

CRS provides a wide range of ferrules made from Vespel®, Vespel/Graphite, Graphite and PTFE. Ferrule sizes refer to the size of the fittings into which they fit; they are not the diameter of the ferrule. For example, 1/16” ferrules are 1/8” diameter and fit in 1/16” fittings.

Graphite Ferrules - Sold in packages of 10; except as noted

Graphite Ferrules

1/16” Graphite Ferrules: Blank, 0.5mm ID, Straight

211165

• Upper temperature limit: 450°C

Description Item No. Straight Ferrules - for tubing with ODs listed

1/16” Ferrules 211100

1/8” Ferrules 211200

1/4” Ferrules 211400

3/8” Ferrules 211600

1/2” Ferrules, 5/pk 211800

3/4” Ferrules, 5/pk 211120

Blank Ferrules - no holes

1/16” Blank Ferrules 2111XX

1/8” Blank Ferrules 2112XX

1/4” Blank Ferrules 2114XX

Capillary Column Ferrules For Capillary Sizes - ID

1/16” to 0.4 mm 0.25 mm 211104

1/16” to 0.5 mm 0.32 mm 211105

1/16” to 0.8 mm 0.53 mm 211108

1/16” to 1.0 mm 0.65 mm 211110

1/16” to 1.2 mm 0.75 mm 211112

1/16”, two-hole, 0.5 mm each 0.32 mm 211125

Short Ferrules for Agilent Inlets\*

1/16” to 0.4 mm 0.18 mm 211164

1/16” to 0.5 mm 0.25 - 0.32 mm 211165

1/16” to 0.8 mm 0.53 mm 211168

1/16” to 1.0 mm 0.53 - 0.65 mm 211160

For Tubing (Fitting Size to Tubing OD)

1/16” to 1/16” straight ferrule 1/16” 211170

*\*Short ferrule for Agilent inlet systems: 5890, 6890 and 7890.*

**12** Chromatography Research Supplies

211205



|  |  |  |
| --- | --- | --- |
| Reducing Ferrules1/8” to 0.4 mm | For Capillary Sizes - ID0.25 mm | 211204 |
| 1/8” to 0.5 mm | 0.32 mm | 211205 |
| 1/8” to 0.8 mm | 0.53 mm | 211208 |
| 1/8”, two-hole, 0.5 mm each | 0.32 mm | 211222 |
| 1/4” to 0.5 mm | 0.32 mm | 211405 |
| 1/4” to 0.8 mm | 0.53 mm | 211408 |
|  | For Tubing Sizes - OD |  |
| 1/8” to 1/16” | 1/16” | 211210 |
| 1/4” to 4 mm | 4 mm | 211440 |
| 1/4” to 6 mm | 6 mm | 211406 |
| 1/4” to 1/16” | 1/16” | 211410 |
| 1/4” to 1/8” | 1/8” | 211420 |
| Shimadzu Ferrules |  |  |
| 5 mm, Shimadzu 5 mm OD columns |  | 211500 |
| Capillary Column Ferrules | For Capillary Sizes - ID |  |
| Shimadzu 17A, 2010, & 2014 GCs, 0.4mm | 0.25 mm and less | 211174 |
| Shimadzu 17A, 2010, & 2014 GCs, 0.5mm | 0.32 mm | 211175 |
| Shimadzu 17A, 2010, & 2014 GCs, 0.8mm | 0.53 mm | 211178 |
| Thermo Instrument FerrulesM8 Nut |  |  |
| 0.5 mm ID |  | 211905 |
| 0.8 mm ID |  | 211908 |
| Cup Ferrules - M4 Nut | For Capillary Sizes - ID |  |
| 0.28 mm ID |  | 211982-10 |
| 0.38 mm ID | 0.25 mm | 211983-10 |
| 0.48 mm ID | 0.32 mm | 211984-10 |
| 0.80 mm ID | 0.53 mm | 211988-10 |

211410

211500

211174

211905

211983-10

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**Ferrules**

216973

216949

216948

Vespel® Ferrules

1/16” Vespel Ferrules: Blank, 0.5mm ID, Straight

Liner Seals; O-Rings

Graphite and Fluoroelastomer liner seals.

Description Similar Part No. Qty Item No. For Agilent Instruments

Graphite Liner Seal, 6.35 mm ID 5180-4168 10 216635

Graphite Liner Seal, 6.52 mm ID 5180-4173 10 216652

O-ring made of Fluoroelastomer for Agilent 12 216973

Fluoroelastomer O-ring for Agilent 10 216980

For PerkinElmer

Graphite O-Ring each 216637

For Shimadzu Instruments

Graphite Liner Seal 10 211195

Graphite O-Ring, Split 221-48393-91 10 216638

Graphite O-Ring, Splitless 221-47222-91 10 216639

For Thermo Trace GC

5 mm Graphite Seal 2 216949

8 mm Graphite Liner Seal each 216948

For Varian 1078/1079

Graphite Liner Ferrule each 211550

Vespel Ferrules - Sold in packages of 10

• Upper temperature limit: 350°C

Description Item No. Straight Ferrules - for tubing with ODs as listed

1/16” Ferrules 212100

1/8” Ferrules 212200

1/4” Ferrules 212400

Blank Ferrules - no holes

1/16” Blank Ferrules 2121XX

1/8” Blank Ferrules 2122XX

1/4” Blank Ferrules 2124XX

**14** Chromatography Research Supplies

212104



|  |  |  |
| --- | --- | --- |
| Capillary Column Ferrules1/16” to 0.3 mm | For Capillary Sizes - ID0.10 - 0.18 mm | 212103 |
| 1/16” to 0.4 mm | 0.25 mm | 212104 |
| 1/16” to 0.5 mm | 0.32 mm | 212105 |
| 1/16” to 0.8 mm | 0.53 mm | 212108 |
| 1/16” to 1.0 mm | 0.65 mm | 212110 |
| 1/16” to 1.2 mm | 0.75 mm | 212112 |
| 1/16”, two-hole, 0.4 mm each | 0.25 mm | 212124 |
| 1/16”, two-hole, 0.5 mm each | 0.32 mm | 212125 |
| Short Ferrules for Agilent Inlets\*1/16” to 0.4 mm | 0.25 mm | 212164 |
| 1/16” to 0.5 mm | 0.32 mm | 212165 |
| 1/16” to 0.8 mm | 0.53 mm | 212168 |
| Reducing Ferrules1/8” to 0.4 mm | 0.25 mm | 212204 |
| 1/8” to 0.5 mm | 0.32 mm | 212205 |
| 1/8” to 0.8 mm | 0.53 mm | 212208 |
| 1/8”, two-hole, 0.5 mm each | 0.32 mm | 212222 |
| For Tubing (Fitting Size to Tubing OD)1/8” to 1/16” | 1/16” | 212210 |
| 1/4” to 1/16” | 1/16” | 212410 |
| 1/4” to 1/8” | 1/8” | 212420 |

212165

212222

*\*Short ferrules for Agilent inlet systems: 5890, 6890 and 7890.*

Please note for all ferrules:

• 0.4 mm ID ferrules fit 0.25 mm ID capillary columns

• 0.5 mm ID ferrules fit 0.32 mm ID capillary columns

• 0.8 mm ID ferrules fit 0.53 mm ID capillary columns

• Straight ferrules are used for packed columns

Ferrule Remover

These are effective tools for removing ferrules. The threaded end locks in the ferrule hole to allow a good grip. Two tools are supplied for ferrules from 0.4 mm to 0.8 mm ID.

Description Item No. Ferrule Remover 205315

205315

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**Ferrules**

Vespel/Graphite Ferrules

213200

Vespel®/Graphite Ferrules - Sold in packages of 10; except as noted

• Upper temperature limit: 400°C

• Precision drilled ID

Description Item No. Straight Ferrules - for tubing with ODs as listed

1/16” Ferrules 213100

213105



|  |  |  |
| --- | --- | --- |
| 1/8” Ferrules |  | 213200 |
| 1/4” Ferrules |  | 213400 |
| 1/2” Ferrules, 5/pk |  | 213800 |
| Blank Ferrules - no holes1/16” Blank Ferrules |  | 2131XX |
| 1/8” Blank Ferrules |  | 2132XX |
| 1/4” Blank Ferrules |  | 2134XX |
| Capillary Column Ferrules1/16” to 0.3 mm | For Capillary Size - ID | 213103 |
| 1/16” to 0.4 mm | 0.25 mm | 213104 |
| 1/16” to 0.5 mm | 0.32 mm | 213105 |
| 1/16” to 0.8 mm | 0.53 mm | 213108 |
| 1/16” to 1.0 mm | 0.65 mm | 213110 |
| 1/16”, two-hole, 0.4 mm each | 0.25 mm | 213124 |
| 1/16”, two-hole, 0.5 mm each | 0.32 mm | 213125 |
| Short Ferrules for Agilent Inlets\*1/16” to 0.3 mm | 0.10 mm | 213163 |
| 1/16” to 0.4 mm | 0.25 mm | 213164 |
| 1/16” to 0.5 mm | 0.32 mm | 213165 |
| 1/16” to 0.8 mm | 0.53 mm | 213168 |
| Reducing Ferrules1/8” to 0.4 mm | 0.25 mm | 213204 |
| 1/8” to 0.5 mm | 0.32 mm | 213205 |
| 1/8” to 0.8 mm | 0.53 mm | 213208 |
| 1/8”, two-hole, 0.5 mm each | 0.32 mm | 213222 |
| 1/8”, two-hole, 0.8 mm each | 0.53 mm | 213228 |
| 1/4” to 0.4 mm | 0.25 mm | 213404 |
| 1/4” to 0.5 mm | 0.32 mm | 213405 |
| 1/4” to 0.8 mm | 0.53 mm | 213408 |

213164

**16** Chromatography Research Supplies

|  |  |  |
| --- | --- | --- |
|  | For Tubing Sizes - OD |  |
| 1/8” to 1/16” | 1/16” | 213210 |
| 1/4” to 1/16” | 1/16” | 213410 |
| 1/4” to 6 mm | 6 mm | 213406 |
| 1/4” to 1/8” | 1/8” | 213420 |

*\*Short ferrule for Agilent inlet systems: 5890, 6890 and 7890.*

PTFE Ferrules - Sold in packages of 10

• Upper temperature limit: 250°C

• 100% PTFE

Description Item No. Straight Ferrules - for tubing with ODs as listed

1/16” Ferrules 214100

PTFE Ferrules

214300



|  |  |  |
| --- | --- | --- |
| 1/8” Ferrules |  | 214200 |
| 3/16” Ferrules |  | 214300 |
| 1/4” Ferrules |  | 214400 |
| Blank Ferrules - no holes1/16” Blank Ferrules |  | 2141XX |
| 1/8” Blank Ferrules |  | 2142XX |
| 1/4” Blank Ferrules |  | 2144XX |
| Capillary Column Ferrules1/16” to 0.3 mm | For Capillary Sizes - OD | 214103 |
| 1/16” to 0.4 mm | 0.25 mm | 214104 |
| 1/16” to 0.5 mm | 0.32 mm | 214105 |
| 1/16” to 0.8 mm | 0.53 mm | 214108 |
| 1/16” to 1.0 mm | 0.65 mm | 214110 |
| 1/16” to 1.2 mm | 0.75 mm | 214112 |
| Reducing Ferrules1/8” to 0.4 mm | 0.25 mm | 214204 |
| 1/8” to 0.5 mm | 0.32 mm | 214205 |
| 1/8” to 0.8 mm | 0.53 mm | 214208 |
| 1/8” to 1/16” | For Tubing Sizes - ID1/16” | 214210 |
| 1/4” to 6 mm | 6 mm | 214406 |
| 1/4” to 1/16” | 1/16” | 214410 |
| 1/4” to 1/8” | 1/8” | 214420 |
| 1/4” to 3/16” | 3/16” | 214430 |

2144XX

214410

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