

Micropacked Columns

(0.75 and 1.0mm ID's)

Overview

All micropacked columns are made from packing materials that pass a chromatographic batch test. Individual columns are then tested to ensure consistent packing weight and density. Similar resolution and retention of the test mix components, illustrated by the batch test chromatogram included with this column, should be obtained. If you have difficulties achieving acceptable chromatographic performance, please call technical service at 800-356-1688 or 814-353-1300, ext. 4.

Micropacked columns are manufactured using inert Silcosteel® tubing that allows active compounds to be analyzed with minimal peak tailing. To prevent any loss of packing due to rapid pressurization or depressurization, an end plug is made by crimping inert braided Silcosteel®-treated wire. The crimp is inserted approximately 6mm from the end of the column in a position where it will not interfere with connections to Valco® fittings and valves, or other chromatographic-grade connectors. Ferrule seals should not be attempted directly on the crimped region of the tubing or leakage will occur.

CAUTION: Each column end has been sealed with a Silcosteel® braided wire to keep the packing intact under high pressures. Do not cut either end of a micropacked column or this seal will be lost and cause a loss of packing material.

For Agilent capillary injectors and detectors, the following considerations must be made:

The hole in the standard inlet seal for the Agilent capillary injector is too narrow for the 0.75mm ID column. Restek offers an inlet seal with a 1/16-inch hole (cat.# 20392) that allows the column to fit into the injection port at the proper insertion distance.

The standard Agilent flame jet has an ID that is too narrow for the micropacked column to fit into. Restek offers a flame jet with a fluted tip (cat.# 20670) for Agilent GCs that allows the 0.75mm ID micropacked columns to fit inside the jet. The standard Agilent jet will work with the micropacked columns placed slightly below the entrance, but sensitivity may be compromised.

**Micropacked columns exhibit a higher backpressure than 2mm ID packed columns due to their smaller bore (see Table II).*

***While 0.8mm ID graphite ferrules easily deform to fit the 0.9mm OD micropacked tubing, 0.8mm ID Vespel®/graphite ferrules may require the use of a small drill to enlarge the bore.*

Operating Hints*

Maximum conditioning temperatures are supplied with the batch test chromatogram. Micropacked columns must be preconditioned prior to use. To condition:

1. Connect the column to a helium carrier gas source using the ferrule size noted in Table I. Set the column flow to approximately 20cc/min. using a digital flow calibrator (cat.# 20123). ASTM Method D4815 provides details on conditioning and use for TCEP micropacked columns (cat.# 19040).
2. Program the GC oven from 40°C to the maximum packing temperature (see batch test chromatogram for maximum temperatures) at a rate of approximately 5°C/min. Condition HayeSep® porous polymer packings at their maximum temperature for at least 60 minutes. Condition molecular sieve packings for a minimum of 180 minutes. Do not exceed 8 hours.
3. Cool the column and run a performance test mixture similar to the batch test chromatogram. Call technical service at 800-356-1688 or 814-353-1300, ext. 4, if peak tailing or inadequate resolution is obtained.

Table I—Recommended Ferrules (1/16-inch fittings)

Tubing ID	Tubing OD	Graphite	Vespel®/Graphite
0.75mm	0.9mm	0.8mm ID (cat.# 20202)	0.8mm ID** (cat.# 20213)
1.00mm	1/16-inch	1/16-inch ID (cat.# 20207)	1/16-inch ID (cat.# 20218)

Table II—Typical pressures needed for 20mL/min. helium flow at 25°C*

Tubing	Pressure
2m x 1mm ID	40 psi
1m x 1mm ID	30 psi
2m x 0.75mm ID	60 psi
1m x 0.75mm ID	50 psi



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Call Technical Service at 800-356-1688 or 814-353-1300, ext. 4 (or your local Restek representative) if you have any questions about this product or any other Restek product.