

Micropacked Columns

(0.53 mm ID)

Important Notes:

1. Packing materials used in micropacked columns are preconditioned prior to packing. Occasionally, to minimize static charge, a small volume of a proprietary solvent may be used to aid in the packing of the column. This will not affect column performance; however, care should be taken when installing the column for the first time.
 2. Micropacked columns should be conditioned prior to use following the steps in the Installation Instructions section below (unless otherwise stated or if ordered preconditioned*).
 3. All molecular sieve columns are fully activated and end capped to prevent moisture diffusion.
 4. Micropacked columns are manufactured with a one inch void at both ends (unless otherwise noted).
 5. For gas chromatographs designed for capillary columns, 0.53 mm ID micropacked columns can usually be installed without the need for adaptors (using the appropriate 0.8 mm ID ferrule). However, if you experience installation difficulties, please consult with the GC manufacturer or contact Restek's Technical Service group.
 6. Micropacked columns contain a Siltek®-treated braided wire which is held in place by a crimp in the tubing. To ensure leak-free connections, do not install a ferrule on the crimped area of the tubing.
 7. Never cut or trim either end of a micropacked column.
- * A small preconditioning fee will apply.

Installation Instructions:

1. Remove the column end caps (and silicone ferrule, if present) and attach a proper 0.8 mm ID ferrule.
2. Connect the column to the injection port (do not connect to the detector unless the column has been preconditioned). Slowly increase the column head pressure until the pressure drop is overcome and the carrier gas flow exits the column. Please note that a small amount of solvent vapor may also exit the column (see #1 under Important Notes).
3. Increase the head pressure until the desired flow rate is obtained. Typical carrier gas flow rates for 0.53 mm ID micropacked columns are 3 to 5 mL/min. See Table I for approximate head pressures. Do not rely on the GC displayed flow rate; measure the flow exiting the column using a bubble flowmeter or an electronic flowmeter (Restek ProFLOW 6000 Electronic Flowmeter, cat.# 22656).
4. Set the GC oven temperature to 40 °C and purge the column for 15 minutes with clean, dry carrier gas (carrier gas purifiers for oxygen and moisture are highly recommended).
5. Set the injection port temperature to 150 °C and verify the GC oven temperature is 40 °C.

6. Program the GC oven from 40 °C to the maximum temperature limit for the packing material at a ramp rate of 5 °C/min. Once the column's maximum temperature is reached, hold this temperature for at least 60 minutes for porous polymers and liquid phase coated solid supports, and for at least 3 hours for molecular sieves. Do not exceed maximum temperature for any packing.
7. Cool the GC oven and attach the column to the detector. Set the appropriate detector temperature and allow it to stabilize. The column is now ready for use.

Table I: Approximate head pressures (at 40 °C) for 0.53 mm ID micropacked columns.

Column Length (mm)	Mesh Size	Pressure (approx. psi)
1 m	80/100	30
1 m	100/120	40
2 m	80/100	60
2 m	100/120	80

Helpful Hints:

1. Always turn off the carrier gas and allow the column pressure to reach zero (atmospheric pressure) before performing any routine maintenance, such as changing septa, or removing the packed column. Failure to do so may expel the packing material from the column.
2. Never exceed the recommended maximum temperature of the packing.
3. Occasionally, molecular sieve columns need to be regenerated to remove moisture. To regenerate, confirm a carrier gas flow of at least 5 mL/min., set the GC oven temperature to 300 °C, and bake the column for 3 hours.
4. Please note that the observed pressure drop will differ across packed columns, even among those with the same mesh size. This is due to differences in particle shape and size. Particle shape varies and irregularly shaped particles will pack more densely than spherical particles. In addition, because mesh size is actually a range of particle sizes and not simply a single size, each column will have a unique pressure-drop. Therefore, carrier gas head pressure may need to be adjusted for each packed column, even for those columns which contain the same packing.
5. Micropacked columns have less capacity than traditional packed columns. If you experience irregular peak shapes or tailing peaks, verify that the column is not overloaded by injecting less sample or standard.
6. Since high carrier gas pressures are used with micropacked columns, always leak check the connections using an electronic leak detector (Restek Electronic Leak Detector, cat.# 22839).

Contact Technical Service (800-356-1688 or support@restek.com) or your Restek representative if you have any questions about this product or any other Restek product.

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