General Care and Use of Supelco™ HPLC Columns

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This HPLC column has been extensively tested and inspected to ensure the highest quality possible. If you have any questions regarding this product, immediately notify your Supelco representative.

Column Information

The tag attached to the column indicates catalog number, packing type, column dimensions, particle size, flow direction, and column number. Keep this important information with the column at all times. The column number allows us to trace the manufacturing history of your column.

Connecting the Column to Your System

Supelco HPLC columns are provided with zero dead volume threaded end fittings. Flow direction during the column packing process is indicated on the column. Operate the column with the mobile phase flowing in this direction. Before connecting the column outlet to the detector, flush the column with mobile phase. This will prevent small particles, which can settle on the column frits during shipping and handling, from being washed into the detector.

Column Care

For optimum column performance and maximum life, the following conditions must be met.

pH — Operate silica and bonded silica columns within a pH range of 2.0 to 7.5. Higher pH will dissolve the silica, creating voids in the column. Lower pH can eventually strip away some of the bonded phase. These defects will cause changes in retention times.

Solvents — Silica-based reversed-phase columns can be used with all common HPLC grade organic solvents. Buffers made from acetate, citrate, formate, and phosphate salts at concentrations up to 0.2 M have been used without adverse effect. Organic modifiers and ion-pair reagents also present no problems as long as the appropriate pH range is not exceeded. Because ion-pair reagents are often difficult to completely flush from the column, columns used with these reagents should be dedicated to the particular application.

Limit the use of strong acids and bases to amounts needed to adjust the pH of the mobile phase. Be careful not to mix, or use in sequence, solutions that might precipitate or gel in the column or system.

Due to PEEK frit caps, it is not recommended to use solvents incompatible with PEEK.

Column Storage — To store the column, seal with the end plugs provided. Other plugs may allow the column to dry out, prolonging equilibration or reducing column performance. When storing the column for several days or longer, flush the column with 100 to 200 mL of the shipping solvent, then seal with the end plugs provided.

Column Protection — Protect all analytical and preparative columns with an in-line frit filter and a guard column. Supelco guard columns are supplied as stand-alone units (use with any HPLC column) or integrated. We recommend a filter with 2 µm porosity frits be used with a column containing a 5 µm packing. A filter with 0.5 µm pores is essential for adequate protection of a 3 µm packing.

Column Life — Column life is highly dependent on the sample and conditions, and cannot be generalized. To maximize column life, make sure samples and mobile phases are clean, particle-free, and use a guard column with an in-line frit filter.

Pressure — Continuous monitoring of system pressure will alert you to changes that may require you to perform preventative maintenance such as column washing, replacement of a guard column or filter, or cleaning of an inlet frit. A sudden increase in pressure usually means that there is a plugged frit at the column inlet. To unplug the frit, reverse the column and flush to waste with an appropriate solvent.

Temperature — Supelco silica-based columns have been used successfully at temperatures up to 75 °C. Prolonged use at temperatures above 75 °C can shorten column life.

Further Information

HPLC Troubleshooting Guide (Bulletin 826-AIV)

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