

## Column Care & Usage



Catalog Numbers: 1000-0, 1020-0  
Column Type: BP-100 Ca<sup>++</sup>, Calcium form for Carbohydrate Analysis

**The following information will help you achieve optimal column performance.**

### ➤ Eluent

Using an isocratic system, the mobile phase would be de-ionized water. When the sample contains metal ions, a solution of 50mg/L Ca<sub>2</sub>EDTA may also be used. Column performance and life is greatly affected by the composition of the mobile phase. As a result, only the highest grade, pre-filtered, degassed mobile phases should be used for HPLC applications. All mobile phases should be filtered (0.45 µm or smaller) and degassed prior to use.

### ➤ Selectivity

Selectivity is normally controlled by changing column type as opposed to changing eluent. Retention times increase in the following sequence: Pb<sup>++</sup> > Ca<sup>++</sup> > Ag<sup>+</sup> > Na<sup>+</sup> > H<sup>+</sup>. Retention times of polar samples may be increased and non-polar interactions reduced with the addition of organic solvents. However, due to low cross-linking of the resin, Benson Polymeric does not recommend the use of organic solvents. If your application calls for the addition of organic solvents, please contact the company for assistance.

### ➤ Temperature

For best overall separation of carbohydrates, 80-85°C is the recommended operating temperature. **ALWAYS, pre-heat the column and stabilize the temperature prior to pumping mobile phase.**

### ➤ Sample Preparation

Samples may contain precipitates or other contaminants such as metal compounds which bind with the resin. Contaminates change the column chemistry, resulting in a decrease in the effective surface area of the column and decreasing sample retention. To provide maximum protection for the analytical column, use a guard column and pre-filter all samples through a 0.45 µm or smaller filter membrane prior to injection. Compounds which may bind irreversibly with the resins should be removed using solid phase extraction (SPE) procedures.

### ➤ General Operating Conditions

Max. Pressure (psi): 1500  
Max. Temperature (°C): 90  
Max. Flow Rate (mL/min) 1.2 at 90°C

### ➤ Column Storage

Columns may be stored in the recommended eluent for several days. Long term storage should be in de-ionized water. Storage in other mobile phases may support bacterial growth leading to reduced capacity and/or high back pressure. Do not let the columns dry out. Replace and tighten end plugs when storing. Columns may be refrigerated but do not freeze.

### ➤ Cleaning and Regeneration

Metal contamination is indicated by shortened retention times and/or skewed peaks. Carbohydrate columns in the calcium form should be pumped in reverse flow mode at 0.1mL/min., with 0.1M Ca(NO<sub>3</sub>)<sub>2</sub> at a pH of 6.3 and a temperature of 85°C for 4-16 hours. To remove organic contamination, pump the columns in reverse flow at 0.1mL/min. with 5/95 acetonitrile/water at 25°C for 4 hours. No regeneration procedure is available if the column has bacterial growth.

### ➤ Thank You

Thank you for purchasing a Benson Polymeric column. With over 40 years of experience in resin manufacturing, column packing and applications development, we are highly qualified to assist you in achieving optimum chromatographic results. As our customer, you deserve the highest quality products and service available in the industry.

### ➤ Other Related Products

Part Number	Description	Dimensions
1000-2	BP-100 Ca <sup>++</sup> Guard	50 x 4.6 mm
1000-0	BP-100 Ca <sup>++</sup>	300 x 7.8 mm
1020-0	BP-100 Ca <sup>++</sup>	100 x 7.8 mm
1040-0	BP-100 Ca <sup>++</sup>	250 x 4.0 mm
1030-0	BP-100 Ca <sup>++</sup>	250 x 4.6 mm
3050-0	\$50 Guard Column Re-packing Discount	
3100-0	\$100 Analytical Column Re-packing Discount	

Other column formats available upon request.

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