

## Column Care & Usage



Catalog Numbers: 1500-0  
Column Type: BP-200 Ca<sup>++</sup> Column 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 CaEDTA 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, 90°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. These contaminants 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): 800  
Max. Temperature (°C): 90  
Max. Flow Rate (mL/min) 0.5 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 a customer you deserve the highest quality products and service available in the industry

### ➤ Other Related Products

Part Number	Description	Dimensions
1550-0	BP-200 Na	300 x 7.8 mm
1600-0	BP-200 Ag	300 x 7.8 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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