

0.2 ml Sr-Spec (50-100 mesh) Columns for Whole Rock Sr Separations

Column Procedure:

1. clean resin	3 ml quartz-distilled H ₂ O
2. precondition column	3 ml 3.5 N HNO ₃
3. load sample	dissolved in 0.2 ml 3.5 N HNO ₃
4. wash	0.1 ml 3.5 N HNO ₃
5. wash	0.1 ml 3.5 N HNO ₃
6. wash	0.1 ml 3.5 N HNO ₃
7. wash	0.5 ml 3.5 N HNO ₃
8. wash	0.5 ml 3.5 N HNO ₃
9. wash	2.5 ml 3.5 N HNO ₃
10. elute Sr	3 ml warm 0.05 N HNO ₃

Resin Cleaning:

Sr-Spec resin is a Sr selective extraction chromatographic material produced by Eichrom Industries, Darien, IL. We preclean the resin by placing an aliquot in a small Teflon bottle which is then filled with quartz-distilled water, shaken well, and placed on a hotplate set at around 50°C overnight. The next day the water is decanted and the procedure is repeated ten times. Once the resin is ready for use, it is transferred to a dropper bottle where it is dispensed as needed. The resin in the columns is disposed of after every use.

For details on this resin, see:

Horwitz, E.P., Chiarizia, R., and Dietz, M.L., 1992. A novel strontium-selective extraction chromatographic resin. *Solv. Extract. Ion Exch.*, 10: 313-336.

Column Construction and Cleaning:

Start with 5.5 cm KORVEX 4 × ½ shrink tubing. Fit the shrink tubing over the end of a standard test tube with approximately 2.5 cm of the tubing extending beyond the end of the test tube. Shrink this portion of the tubing with a hot air gun as far as it will go. This will result in a column with an interior diameter of around 3.6 mm. Place a polystyrene frit in the end of the column and adjust it so that the volume of the column is 0.2 ml. The reservoir (the unshrunk portion of the column) has a volume of 3 ml.

After use, the columns are placed in a Teflon bottle which is then filled with clean water and placed on a hotplate at a low setting for a couple of days. After this, the water is decanted, the columns are rinsed, and 7 N HNO₃ is added to the bottle and placed back on the hotplate at a low setting for a couple more days. After this, the HNO₃ is decanted and the columns are rinsed with clean water and are ready for use.

Questions? Contact Todd Housh (housh@mail.utexas.edu)