

Alltech® Universal Cation HR Columns

About the Packing

The Alltech® Universal Cation HR Column is an addition to our line of Universal Cation Columns. This column is packed with high efficiency, high resolution, 3µm silica particles coated with Polybutadiene/Maleic Acid copolymer. The 3µm packing improves peak efficiencies for all cations.

About the Column

Like the original Alltech® Universal Cation Column, the Universal Cation HR Column is designed to separate monovalent and divalent cations, amines, and transition metals. A variety of mobile phases including methanesulfonic acid, sulfuric acid, nitric acid, citric acid, tartaric acid, and oxalic acid can be used to separate Group I and Group II cations, and amines. For transition metal separations, a mobile phase containing a mixture of tartaric and oxalic acids is required. The column can be used with single-column IC or suppressor-based IC systems.

Since the packing chemistry is identical between this column and the Universal Cation column, methods are transferable between the two columns.

Two column dimensions are offered. The 4.6mm i.d. x 100mm length column separates monovalent and divalent cations in approximately 14 minutes. The Rocket™ column format (7.0mm i.d. x 53mm length) provides speed and separates the six cations in less than 8 minutes.

Care and Use

Alltech® columns are carefully tested to meet specific performance criteria. A test chromatogram is enclosed with each column. Upon receipt of any Alltech® column, the test chromatogram should be duplicated. If any problems occur at this time, please contact Grace Technical Support for troubleshooting advice.

The Universal Cation HR Column, like all liquid chromatography columns, changes with extended use. This is demonstrated by a loss in efficiency and column performance. A column can be damaged by use of incompatible solvents, exceeding pH limitations, changing solvents too frequently, or not filtering the sample or mobile phase.

To extend column life, filter all samples and mobile phases through a 0.45µm filter. Use a scavenger/guard column to protect the analytical column from particulate and chemical contaminants not removed by filtering. Replace the scavenger/guard on a regular basis to extend column life. Use the recommended regeneration procedure only to clean the column. Store column only as recommended.

Alltech® Universal Cation HR Column Specifications	
Composition:	Spherical Silica Coated with Polybutadiene/Maleic Acid Copolymer
Particle Size:	3µm
Mobile Phase Limits:	pH 2-7, 0-100% Organic
Maximum Pressure:	2000 psi

Regeneration Procedures

1. Flush column with 30mL of 50mM methanesulfonic acid (or other acid similar to your mobile phase, but of increased molar concentration) at 1mL/min.
2. Flush with 100mL deionized water.
3. Flush with 50mL methanol.
4. Flush with 100mL deionized water.
5. Re-equilibrate with mobile phase, or storage solvent.

If column does not return to near original performance it should be replaced

Storage

Do not store columns in water alone for more than 5 days as this will promote microbial contamination. Store the column in your mobile phase or in 50:50 methanol:water. The column is shipped in 3mM methanesulfonic acid.

Alltech® Universal Cation HR Columns

Packing	Particle Size	Part No.
Universal Cation HR		
4.6 x 100mm	3µm	23100
7.0 x 53mm	3µm	23109

Guard Columns

Description	Qty	Part No.
All-Guard™ Cartridges (Requires Guard Holder)		
GC-3, 7.5 x 4.6mm (PEEK)	3	23110
Guard Holders (Includes Direct-Connect™ Column Coupler)		
All-Guard™ Cartridge Holder	Ea	80101
All-Guard™ Starter Kits		
GC-3 Starter Kit		
1 Holder, 3 Cartridges	Ea	23115

Figure 1

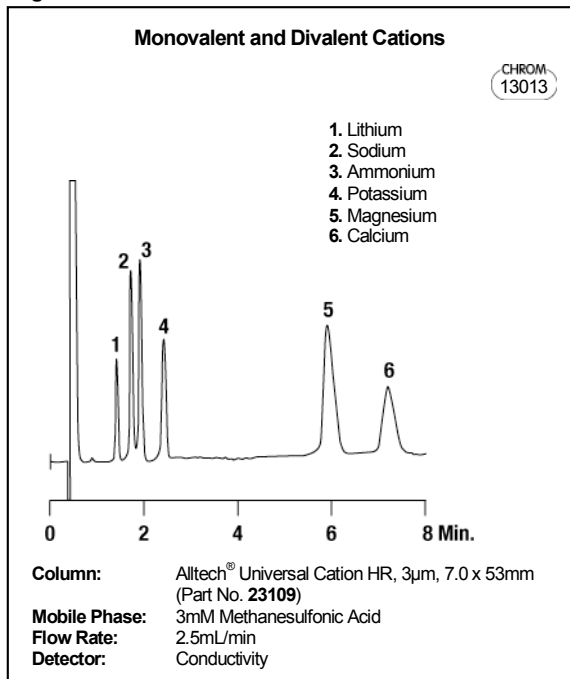


Figure 2

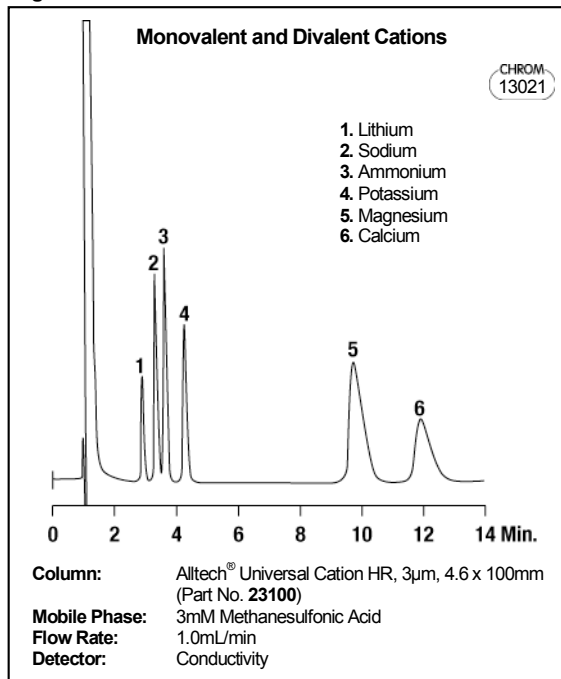


Figure 3

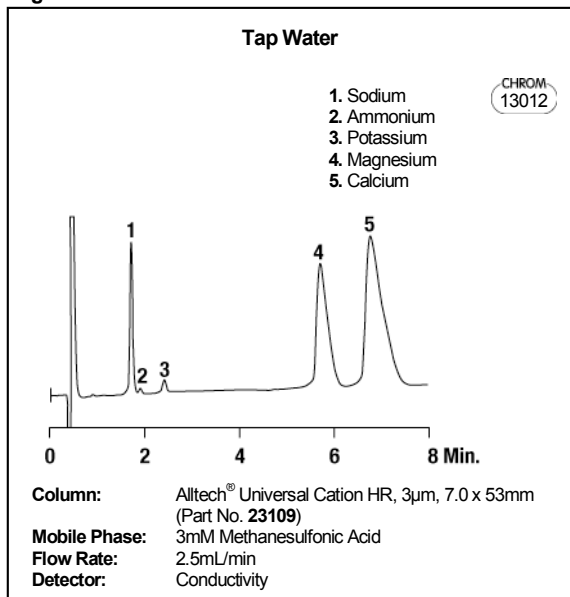
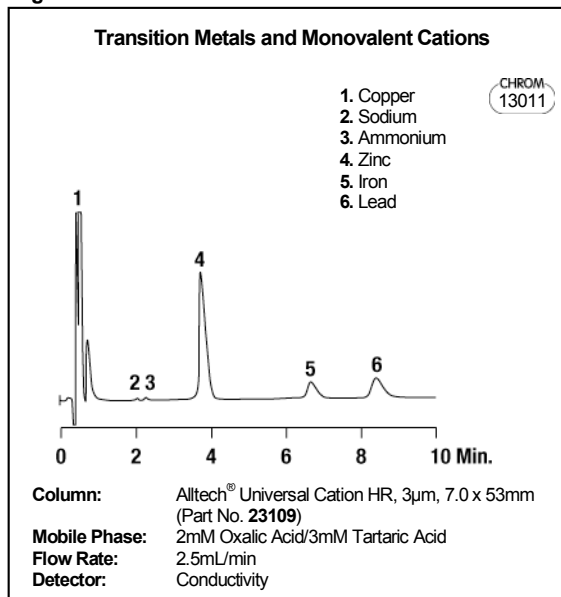


Figure 4



WARNING IMPORTANT Safety Considerations

Columns operate at high pressures. To avoid leaks or pressure related failures, please ensure all fittings and connections are tight and secure before operating the column. Refer to the QC chromatogram for maximum operating pressures.

Always use appropriate personal protective equipment such as safety goggles or glasses, lab coat and gloves when the column is in operation or when handling mobile phase.

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6/2008

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