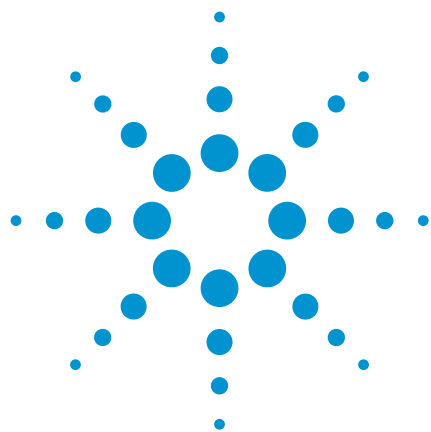




High Resolution of Hydroxyethyl Celluloses

Agilent PL aquagel-OH Columns

Technical Overview

Introduction

PL aquagel-OH columns are ideal for relatively high molecular weight aqueous separations of cellulose by size exclusion chromatography (SEC) because they combine high pore volume and high column efficiency to deliver maximum resolution.

Three samples of hydroxyethyl cellulose were analyzed by SEC using PL aquagel-OH columns. This polymer is a cellulose derivative used in the manufacture of personal care lubricants and cellulose films. The calculated molecular weight averages were compared with manufacturers' quoted viscosity values. Calibration was done using Agilent pullulan polysaccharide standards. Figure 1 shows the raw data chromatograms for a mixture of hydroxyethyl celluloses. A good correlation between viscosity and molecular weight averages was obtained, as can be seen in the table.



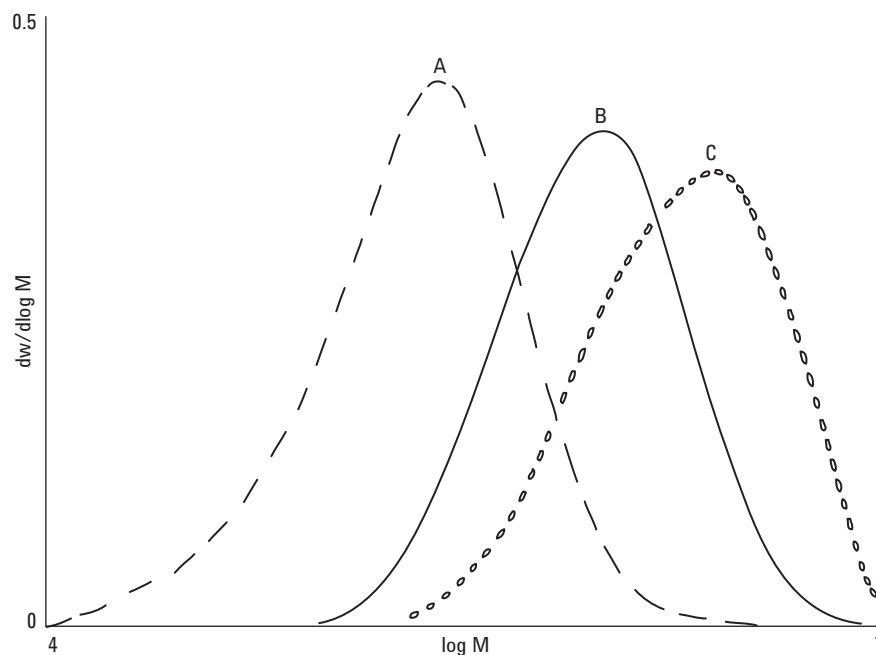
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Conditions

Columns: 2 x PL aquagel-OH 60 8 μ m,
300 x 7.5 mm (p/n PL1149-6860)
+ 1 x PL aquagel-OH 40 8 μ m,
300 x 7.5 mm (p/n PL1149-6840)
Eluent: 0.05 M NaH_2PO_4 + 0.25 M NaCl at
pH 7
Flow Rate: 1 mL/min
Detection: RI

Table 1. Calculated MW averages in comparison with manufacturers' quoted viscosity values

Viscosity Range (cps)	Sample		
	A	B	C
	75-112	250-324	1500-2500
Mn	60,300	413,000	914,000
Mw	179,000	849,000	2,016,000
Mz	39,000	1,552,000	3,422,000

**Figure 1. Raw data chromatograms for a mixture of hydroxyethyl celluloses**

These data represent typical results. For further information, contact your local Agilent Sales Office.

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