



Eluent Modification in GPC for Reduced Interaction Agilent PLgel 5 μm MIXED-C Columns

Technical Overview

Introduction

For certain polymer/solvent systems, adsorption phenomena can be observed in organic GPC separations. Evidence for this is that GPC peaks may be smaller than expected, elute later than expected or not elute at all depending on how strong the interaction is. In the case of polylactic acid, which was fully soluble in chloroform, very small peaks were observed using 100% chloroform as eluent, especially considering the high sensitivity of the Agilent ELSD. By modifying the eluent with 5% methanol, the solvent polarity is significantly increased. This change in eluent polarity is sufficient to minimize solute/column interaction. PLgel columns are fully compatible with this type of modification even with water as a modifier up to about 10% by volume.



PLgel columns are fully compatible with eluent polarity modification to prevent analyte adsorption. PLgel 5 μm MIXED-C columns are designed for rapid polymer analysis. With its linear calibration up to 2 million MW, this is the column of choice for highest resolution and accuracy in molecular weight distribution analyses. Rapid solvent change capability, excellent temperature stability and the high resolution of the PLgel 5 μm MIXED-C also provide the versatility essential for today's R&D laboratory.

Conditions

Column: 2 x PLgel 5 μm MIXED-C, 300 x 7.5 mm (part number PL1110-6500)
Eluent: 1. Chloroform
2. Chloroform/methanol (95/5)
Flow Rate: 1.0 mL/min
Detection: Agilent 380-ELSD (neb=40 °C, evap=80 °C, gas=1.0 SLM)

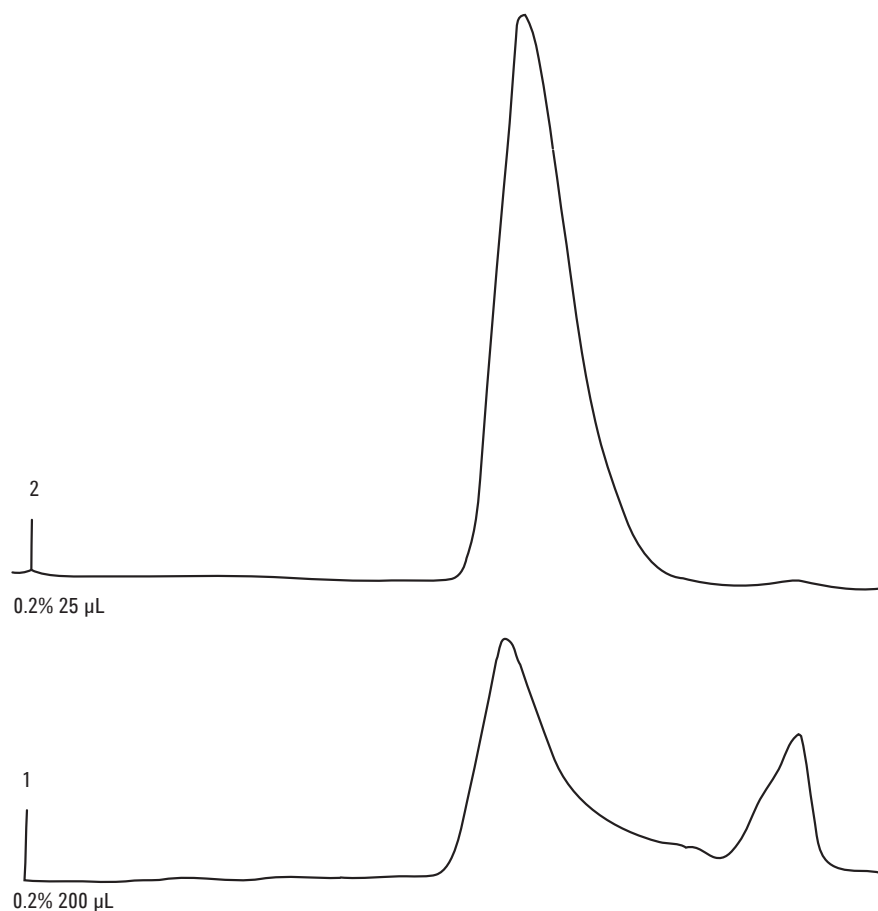


Figure 1. Analysis of poly(lactic acid) with eluent modification using PLgel 5 μm MIXED-C columns

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