Efficient Separation of Polymethylmethacrylate
Agilent PLgel 10 µm MIXED-B Columns

Technical Overview

Introduction

PLgel 10 µm MIXED-B columns are designed for high MW polymer analysis and demanding eluent conditions. The PLgel 10 µm MIXED-B spans a wide range of molecular weights, up to 10 million, with a linear calibration curve. It is particularly useful for molecular weight distributions where slightly higher than average MWs are encountered. The 10 µm particle size provides good resolution with relatively low pressures for enhanced lifetimes in demanding conditions.
The figure shows the separation of a polymethylmethacrylate obtained using PLgel MIXED-B columns. By applying Mark-Houwink parameters (polystyrene $K = 14.1 \times 10^a = 0.70$; polymethylmethacrylate $K = 12.8 \times 10^a = 0.69$), the differences in molecular weight averages shown in Table 1 are revealed.

**Conditions**

Columns: 2 x PLgel 10 µm MIXED-B, 300 x 7.5 mm (p/n PL1110-6100)

Eluent: Methyl ethyl ketone (MEK)

Flow Rate: 1.0 mL/min

Detection: RI

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**Figure 1. Separation of a polymethylmethacrylate obtained using PLgel MIXED-B columns**

**Table 1. $M_p$, $M_w$ and $M_n$ equivalents for PS and PMMA**

<table>
<thead>
<tr>
<th></th>
<th>PS Equivalent</th>
<th>PMMA Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>$M_p$</td>
<td>37521</td>
<td>42286</td>
</tr>
<tr>
<td>$M_w$</td>
<td>36669</td>
<td>41628</td>
</tr>
<tr>
<td>$M_n$</td>
<td>19354</td>
<td>21714</td>
</tr>
</tbody>
</table>

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