Analysis of the Isomeric Forms of Methyl-D-Glucopyranose

Application Note

Introduction

Agilent Hi-Plex ligand-exchange chromatography columns are commonly used for the analysis and separation of sugars and/or sugar alcohols. However, under the right conditions, these columns are also able to separate isomeric forms of simple sugars, such as methyl-D-glucopyranose shown here in this application note.
Conditions

Column: Agilent Hi-Plex Ca, 7.7 × 300 mm, 8 μm (p/n PL1170-6810)
Sample: Methyl-alpha/beta-D-glucopyranose isomers
Sample size: 20 mg/mL
Mobile phase: 100% DI H₂O
Flow rate: 0.6 mL/min
Injection volume: 20 μL
Temperature: 85 °C
Detector: RI

Table 1. Peak Identification for Figure 1

<table>
<thead>
<tr>
<th>Peak</th>
<th>Name</th>
<th>Time (min)</th>
<th>Height (μV)</th>
<th>Area (%)</th>
<th>Width 50% (min)</th>
<th>As. USP</th>
<th>10% Asymmetry</th>
<th>Res. HW</th>
<th>Plate counts</th>
<th>Plates/m</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Methyl-beta-D-glucopyranose</td>
<td>10.75</td>
<td>707947.3</td>
<td>47.420</td>
<td>0.22</td>
<td>0.96</td>
<td>0.96</td>
<td>0.00</td>
<td>13722</td>
<td>45739</td>
</tr>
<tr>
<td>2</td>
<td>Methyl-alpha-D-glucopyranose</td>
<td>11.59</td>
<td>694379.7</td>
<td>52.580</td>
<td>0.23</td>
<td>0.96</td>
<td>0.97</td>
<td>2.19</td>
<td>13589</td>
<td>45296</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>100.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1402326.9</td>
<td>180.000</td>
</tr>
</tbody>
</table>

Figure 1. Separation of methyl-alpha/beta-D-glucopyranose isomers using an Agilent Hi-Plex Ca, 8 μm column. See Table 1 for peak identification.

Table 1. Peak Identification for Figure 1

For More Information

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