Polycarboxylic acids
Separation of mono-, di- and polycarboxylic acids used in plastics

Application Note

Materials Testing & Research

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Introduction
HPLC separation of eight mono-, di- and polycarboxylic acids used in plastics on an Agilent Polaris C18-Ether column in 30 minutes.
Conditions

Technique: Agilent Polaris C18-Ether, 3.0 x 250 mm, 5 µm
Part no. A2020250X030

Eluent:
- eluent A: 0.1% trifluoroacetic acid, uvasol
- eluent B: acetonitrile (gradient grade)

Gradient:

<table>
<thead>
<tr>
<th>t (min)</th>
<th>eluent A(%)</th>
<th>eluent B(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>30</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>3</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>40</td>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>

Flow: 0.5 mL/min
Temp: 30 °C
Detection: UV 220 nm
Sample: maleic-/pyromellitic-/adipic-/trimellitic-/phthalic-/terephthalic-/isophthalic-/benzoic acid
12.5 mg/L in water except for adipic acid (1.0 g/L)

Peak identification

1. maleic acid
2. pyromellitic acid
3. adipic acid
4. trimellitic acid
5. phthalic acid
6. terephthalic acid
7. isophthalic acid
8. benzoic acid

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Printed in the USA
31 October, 2011
First published prior to 11 May, 2010
A02072