Carboxylic Ester Analysis on Agilent PLgel MIXED-E with Gel Permeation Chromatography

Application Note

Materials Testing and Research, Polymers

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Introduction

Carboxylic acid esters are made by Fischer esterification, in which a carboxylic acid is treated with an alcohol in the presence of a dehydrating agent. Esters are widely found in fruit and vegetable odors, and in insect pheromones. Commercially they are used in fragrances and as flavorings in the food industry.

Agilent PLgel 3 µm MIXED-E columns simplify the analysis of carboxylic esters by gel permeation chromatography. These columns are ideal for low molecular weight samples that contain oligomeric fractions, as well as polymers, up to 30,000 MW.

Verified for Agilent
1260 Infinity
GPC/SEC System

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Analysis of a carboxylic acid ester

Figure 1 shows the rapid separation of carboxylic acid ester oligomers using two Agilent PLgel 3 µm MIXED-E columns to improve resolution.

Conditions

Column	2 × Agilent PLgel 3 µm MIXED-E, 300 × 7.5 mm (p/n PL1110-6300)
Eluent	THF
Flow rate	1.0 mL/min
Detector	RI
System	Agilent PL-GPC 50

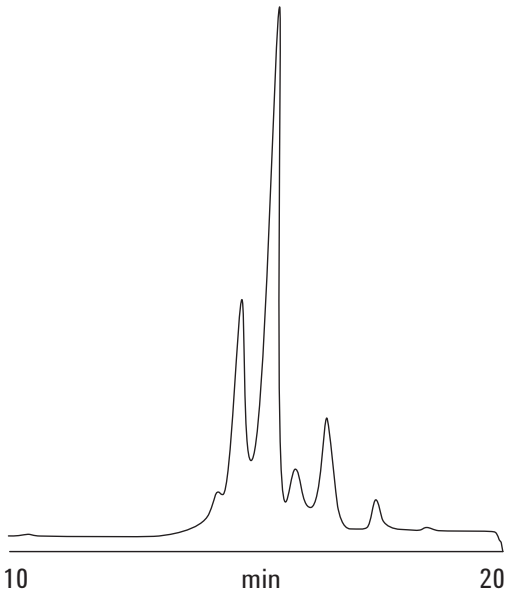

Figure 1. Separation of oligomers of a carboxylic acid ester on an Agilent PLgel 3 µm MIXED-E two-column set.

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