Analysis of Poorly Soluble Cellulose Acetate

Application Note

Materials Testing and Research, Polymers

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Introduction

Used extensively in the photographic and packaging industries, cellulose acetate is soluble in a limited number of solvents. Here, dissolution was achieved in dimethylacetamide after gentle heating and stirring of the sample solution.

Lithium chloride was added to the eluent to counter any polyelectrolyte effects.

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Agilent 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.

Conditions

Columns:	3 x PLgel 10 µm MIXED-B, 300 x 7.5 mm (part number PL1110-6100)
Eluent:	DMAc + 0.5% LiCl
Flow Rate:	1.0 mL/min
Loading:	0.2% w/v, 100 µL
Temperature:	60 °C
Detection:	390-MDS Multi Detector Suite (differential refractive index)

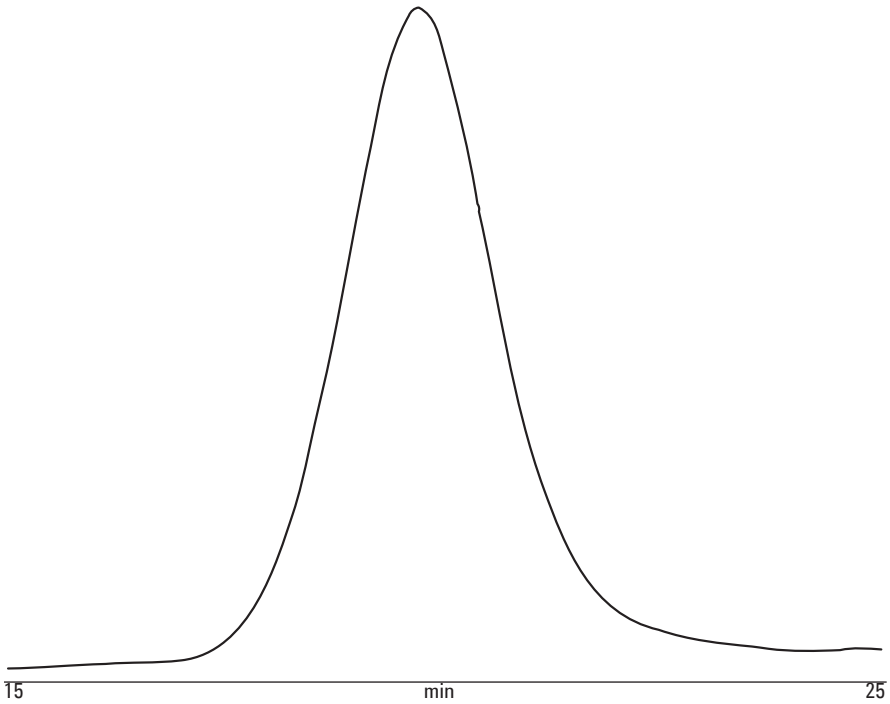

Figure 1. Analysis of cellulose acetate using PLgel 10 µm MIXED-B columns

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Published in UK, April 30, 2015
5991-5809EN

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