

Linear Hydrocarbon Standards on Agilent PLgel 3 μm with Gel Permeation Chromatography

Technical Overview

Introduction

Low molecular weight linear hydrocarbons can be difficult to separate by gel permeation chromatography due to the low hydrodynamic volume of the chains in solution. However, Agilent's high efficiency PLgel 3 μm 100 \AA , 300 \times 7.5 mm columns have been specifically designed for the analysis of low molecular weight discrete molecules.

This example illustrates how hydrocarbons can be resolved and identified from a complex mixture and reveals the high resolving power of the columns for the analysis of low molecular weight molecules.

Figure 1 is a chromatogram of five linear hydrocarbons. Even though the hydrocarbons differ in chain length by as little as four carbons, the individual hydrocarbons have been resolved into separate peaks and are baseline resolved by Agilent PLgel 3 μm 100 \AA .

Conditions

Samples	Linear hydrocarbons, 0.2% (w/v)
Columns	2 \times Agilent PLgel 3 μm 100 \AA , 300 \times 7.5 mm (p/n PL1110-6320)
Eluent	THF
Flow rate	1.0 mL/min
Injection volume	20 μL
Detector	RI
System	Agilent PL-GPC 50



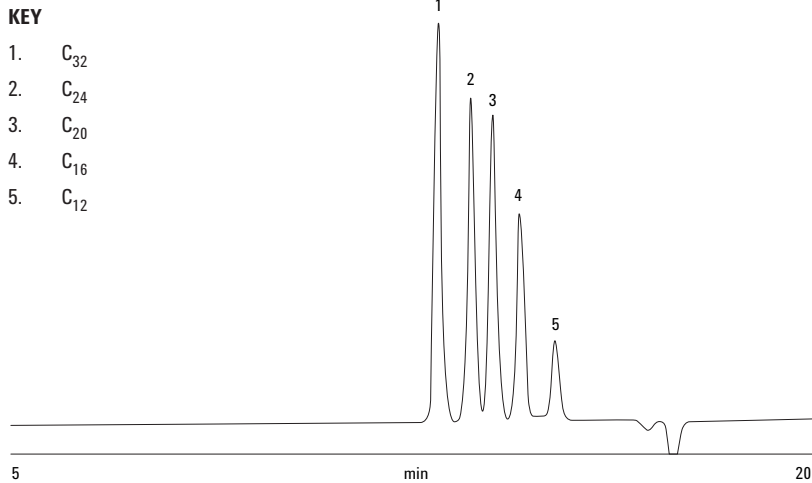


Figure 1. Separation of five low molecular weight linear hydrocarbons to base line on an Agilent PLgel 3 μ m column.

Agilent PLgel 3 μ m Columns

Agilent PLgel individual pore size columns offer high resolution over a specific molecular weight range. The linear portion of the calibration curve, where the slope is at its shallowest, defines the molecular weight region over which optimum resolution is achieved. For the Agilent PLgel 3 μ m 100Å column, the effective molecular weight range extends to 4,000, with a guaranteed efficiency greater than 100,000 plates per meter.

GPC/SEC Columns and Calibrants from Agilent

Agilent offers a comprehensive portfolio of GPC/SEC columns and calibrants for high-performance separations based on molecular size in solution. Agilent delivers leading solutions for characterizing and separating polymers by GPC/SEC, and manufactures all components for accurate polymer analysis.

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 Printed in the USA
 April 30, 2015
 5990-8331EN



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