

Epikote 1001 Resin Analysis by Agilent PLgel MIXED-E and Gel Permeation Chromatography

Application Note

Materials Testing and Research, Polymers

Author

Graham Cleaver
Agilent Technologies, Inc.

Introduction

Epikote is a trade name for a family of epoxy resins, a thermoset polyadduct, used for molding compounds and adhesives. They are manufactured from bisphenol A and epichlorohydrin. There are many different types which correspond to variation in molecular weight and distribution and oligomeric profile. These characteristics relate to the physical properties of the epoxy resin and are therefore important for industrial control. Epikote 1001 is a solid epoxy resin that contains relatively large quantities of higher oligomers.

Gel permeation chromatography for epikote analysis is simple with Agilent PLgel 3 μ m MIXED-E columns. These columns are ideal for low molecular weight samples that contain oligomeric fractions, as well as polymers, up to 30,000 MW.





Analysis of Epikote 1001, an epoxy resin

The chromatogram in Figure 1 shows the separation of a low molecular weight epoxy resin, Epikote 1001. The ultra high efficiency of the Agilent PLgel 3 μ m MIXED-E column gives excellent resolution of the sample oligomers in an analysis time of only 10 minutes.

Conditions

Column Agilent PLgel 3 µm MIXED-E, 300 × 7.5 mm

(p/n PL1110-6300)

Eluent THF

Flow rate 1.0 mL/min

Detector UV, 254 nm

System Agilent PL-GPC 50

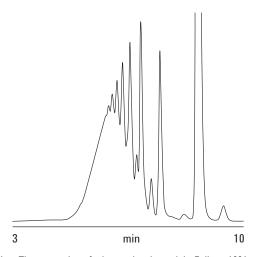


Figure 1. The separation of a low molecular weight Epikote 1001 epoxy resin on an Agilent PLgel 3 µm MIXED-E column.

For More Information

For more information on our products and services, visit our Web site at www.agilent.com/chem.

www.agilent.com/chem

Agilent shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.

Information, descriptions, and specifications in this publication are subject to change without notice.

© Agilent Technologies, Inc., 2015 Printed in the USA April 30, 2015 5990-7985EN

