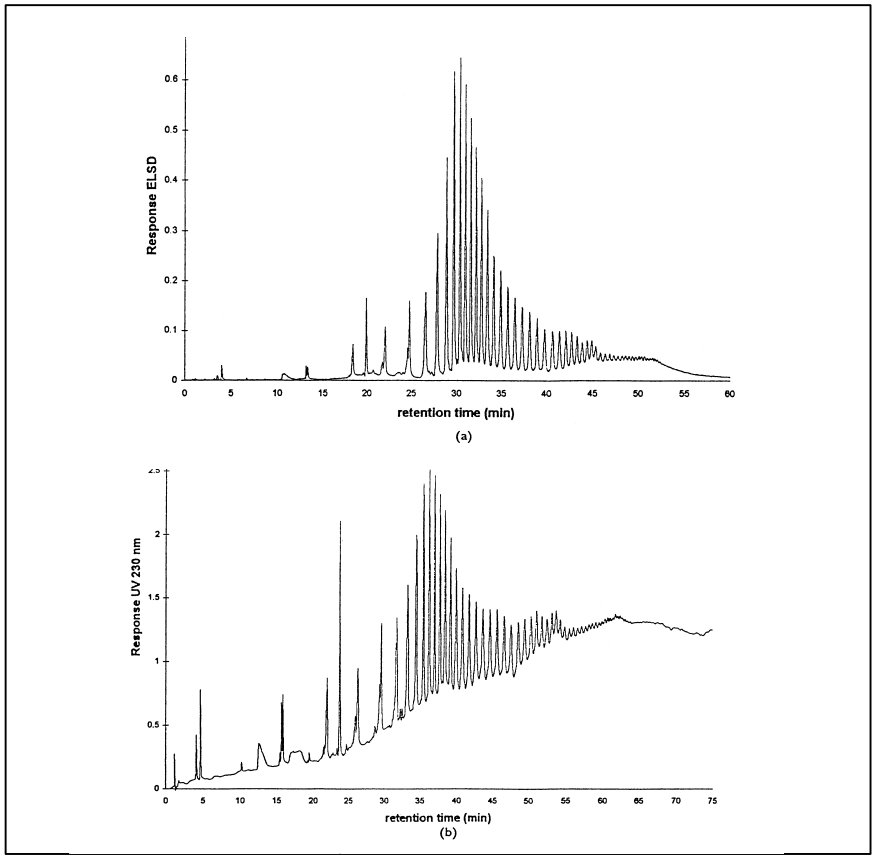
DDL 31 *Applications* N° 48

Separation of polyester oligomers by gradient HPLC comparison of UV and ELS Detections



Chromatograms of Alftalat 3258 - *K. Rissler J. Chromatogr. A 786 (1997) 85-98*

Polyesters find broad application in different fields of chemistry. The oligomers up to molecular mass 10 000 are preferably used in manufacturing of powder coatings in the lacquer industries, as well as flexibilisers and adhesives. In contrast, the higher-molecular-mass sample are essential constituents for the production of injection moulding parts and toolings. Efficient method for the separation of commercially available polyesters composed of multitude of individual oligomers by gradient RPLC was developed. Oligomers up to a molecular mass more than 10 000 could be sufficiently resolved on C18 column using a ternary gradient consisting of ACN, THF and AcOH. In this example, detection was performed with UV Detector set at 230 nm and ELSD. Due to substantial UV mismatch invoked by THF exhibiting marked absorbance at the chosen wavelength, ELSD, which is not associated with baseline drift phenomena, is much suited for identification of individual polyester samples on the basis of the chromatographic fingerprint.

Chromatographic conditions :

Column : C18 nucleosil (125 x 4,6 mm, 5µm, 100 A) (30°c)
Flow Rate : 1.5 ml/mn
Mobile phase A : ACN (0,5% CH_3COOH)
Mobile phase B : THF
Mobile phase C : H_2O (0,5% CH_3COOH)
Evaporation nebulization : 30°C
Evaporation temperature : 40°C
Pressure : 1 Bar
UV : 230 nm

Gradient:

T	*0*	*25*	*35*	*60*	*75*	*76*	*90*
A%	*10*	*75*	*94*	*79*	*79*	*10*	*10*
B%	*0*	*0*	*5*	*20*	*20*	*0*	*0*
C%	*90*	*25*	*1*	*1*	*1*	*90*	*90*

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