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Recycling Preparative HPLC
LaboACE LC-5060

Separation of Structural Isomers by GPC by Column 2

Keyword:GPC Column, SEC Column, Separation by Size Exclusion
Chromatography, Recycling Preparative HPLC

Introduction

GPC (Gel Permeation Chromatography) separates compounds on the basis of molecular size. Therefore GPC is often considered unsuited for separation of isomers or compounds with similar molecular weight. However, there are cases where such compounds are easily separated by applying Recycling Preparative HPLC.

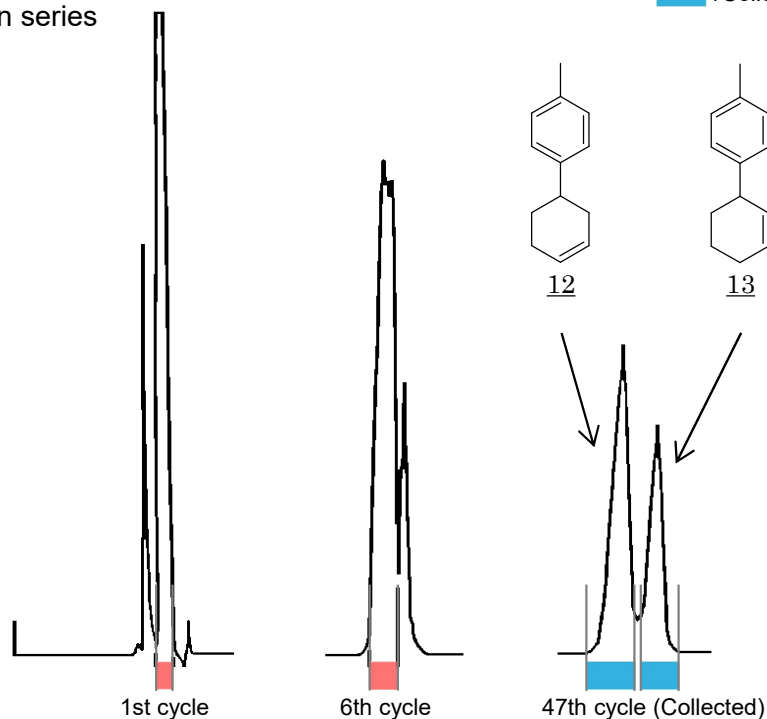
Here is an example of such studies by a professional who uses our Recycling Preparative HPLC system.

Experiment

Compounds 12 and 13 are not separable by silica column HPLC. We tried to separate the isomers by Recycling Preparative HPLC with GPC column

Instrument : LC-908 (Detector : RI)
Column : JAIGEL-1H + 2H in series
Solvent : Chloroform
Flow rate : 3.5 mL/min
Injection qty. : 300 mg

■ : Recycled area
■ : Collected area



Separation of 3- and 4-(p-Tolyl) cyclohexenes

Result

These two compounds with the same MW and little difference in molecular size were successfully separated at the 47th cycle .

Reference

Nobumasa Kamigata et al. J. Chem. Soc. Perkin Trans 1,1990, 549-553