



Basic aromatic compounds

Enantiomer separation of phenoxyacid herbicides

Application Note

Environmental

Authors

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Introduction

GC/MS with an Agilent CP-Chirasil Val column separates six basic aromatic phenoxyacid herbicides in 20 minutes.

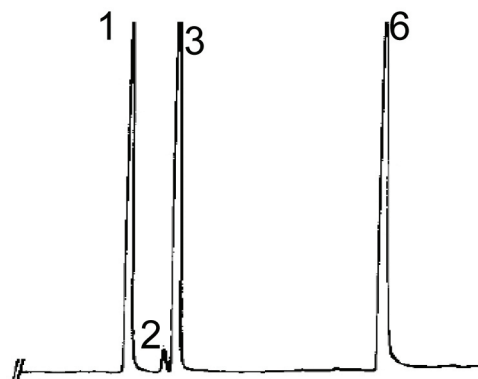


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Conditions

Technique	: GC
Column	: Agilent CP-Chirasil Val, 0.25 mm x 25 m fused silica CHIR-D-VAL (df = 0.08 µm) (Part no. CP7494)
Temperature	: 100 °C, 0.5 min + 10 °C/min → 150 °C 150 °C, 1 min + 2 °C/min → 190 °C, 1 min
Carrier Gas	: Nitrogen 60 kPa (0.6 bar 8.6 psi), 20 cm/s
Injector	: Splitless 0.5 min, T = 240 °C
Detector	: FID T = 250 °C
Sample Size	: A: 1 µL sample containing mecoprop (66 ng/µL), enantiomeric ratio 97.7:2.3 and another phenoxyacid herbicide 2,4-D (30 ng/µL) B : 1 µL sample containing dichlorprop (66 ng/µL), enantioameric ratio 96.4:3.6 and 2,4-D (30 ng/µL)
Concentration Range	: 200 µg/mL

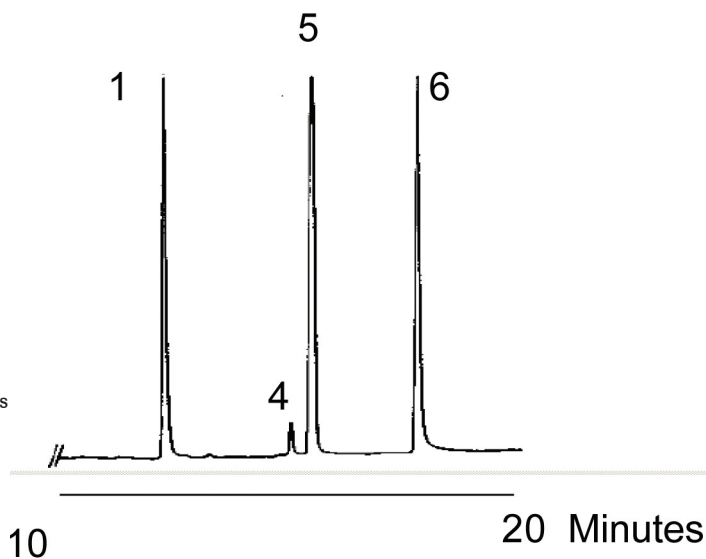
Courtesy : B.Koppen, National Environmental Research
Institute, Soborg, Denmark



Peak identification

- 1 2-chlorophenoxyacetic acid (IS)
- 2 mecoprop- enantiomeric ratio 97.7:2.3
- 3 mecoprop-P
- 4 dichlorprop-M enantiomeric ratio 96.4:3.0
- 5 dichlorprop-P
- 6 2,4-D

The sample preparation consists of the following steps:
Extraction of the phenoxy acids from the aqueous sample with
dichloromethane following acidification with sulfuric acid, derivatization
(thionyl chloride and isopropylamine) of the corresponding isopropylamides
and injection on to the GC.



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Printed in the USA

31 October, 2011

First published prior to 11 May, 2010

A00603



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