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Nota de aplicación

ACQUITY UPLC HILIC Gradient Separation of Organophosphonic Acids

Waters Corporation

This is an Application Brief and does not contain a detailed Experimental section.

Abstract

This application highlights the gradient separation of organophosphonic acids.

Introduction

The compounds used in this study are:

- 1. Pinacolyl methylphosphonic acid (PMPA)
- 2. 2-(methyl)propyl methylphosphonic acid (MMPA)
- 3. Cyclohexyl methylphosphonic acid (CMPA)
- 4. Isopropyl methylphosphonic acid (IMPA)
- 5. Ethyl methylphosphonic acid (EMPA)

Cyclohexyl methylphosphonic acid (CMPA) 2-(methyl)propyl methylphosphonic acid (MMPA) Pinacolyl methylphosphonic acid (PMPA)

$$H_3C$$
 P
 OH
 H_3C
 CH_3

Ethyl methylphosphonic acid (EMPA)

Experimental

Chromatographic Conditions

Columns: ACQUITY UPLC BEH Amide, 2.1 x 100 mm, 1.7 µm

Part Number: 186004801

Mobile Phase A: 50/50 MeCN/H₂O with 10 mM CH₃COONH₄and

0.04% NH₄OH, pH 9.0

Mobile phase B: $95/5 \text{ MeCN/H}_2\text{O}$ with 10 mM CH₃COONH₄ and

0.04% NH₄OH, pH 9.0

Flow Rate: 0.5 mL/min

Injection Volume: 5.0 µL (PLNO)

Sample Concentration: 2 µg/mL each

Sample Diluent: 75/25 MeCN/MeOH

Column Temperature: 65 °C

Weak Needle Wash: 95/5 MeCN/H₂O

Instrument: Waters ACQUITY UPLC with ACQUITY SQD

Gradiet

Time (min)	Profile	
	%A	%B
Initial	0.1	99.9
10.00	99.9	90.0
10.01	0.1	99.9
15.00	0.1	99.9

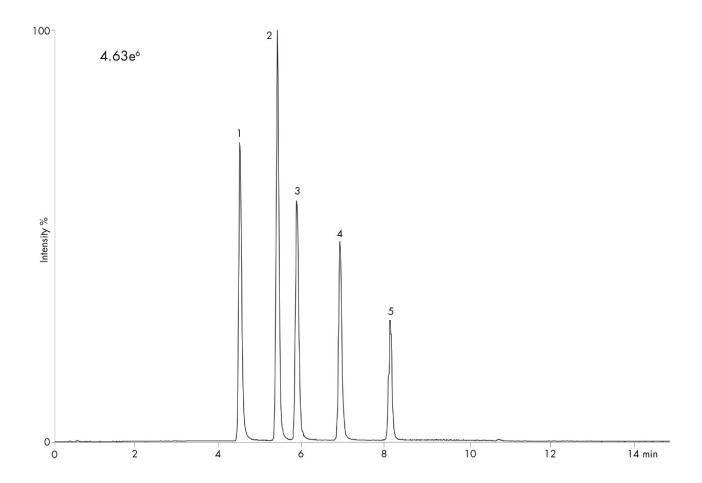
Mass Spectrometer Conditions

Ionization Mode: ES-

Capillary: 2.5 KV

Cone:	30 V (EMPA, IMPA, PMPA);
	40 V (CMPA); 35 V (MMPA)
Source Temperature:	120 °C
Desolvation Temperature:	400 °C
Desolvation Gas Flow:	800 L/Hr
Cone:	5 L/Hr
SIR m/z:	122.9 (EMPA); 136.95 (IMPA);
	179.0 (PMPA); 177.0 (CMPA);
	150.95 (MMPA)
Dwell Time:	0.1 s

Results and Discussion



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