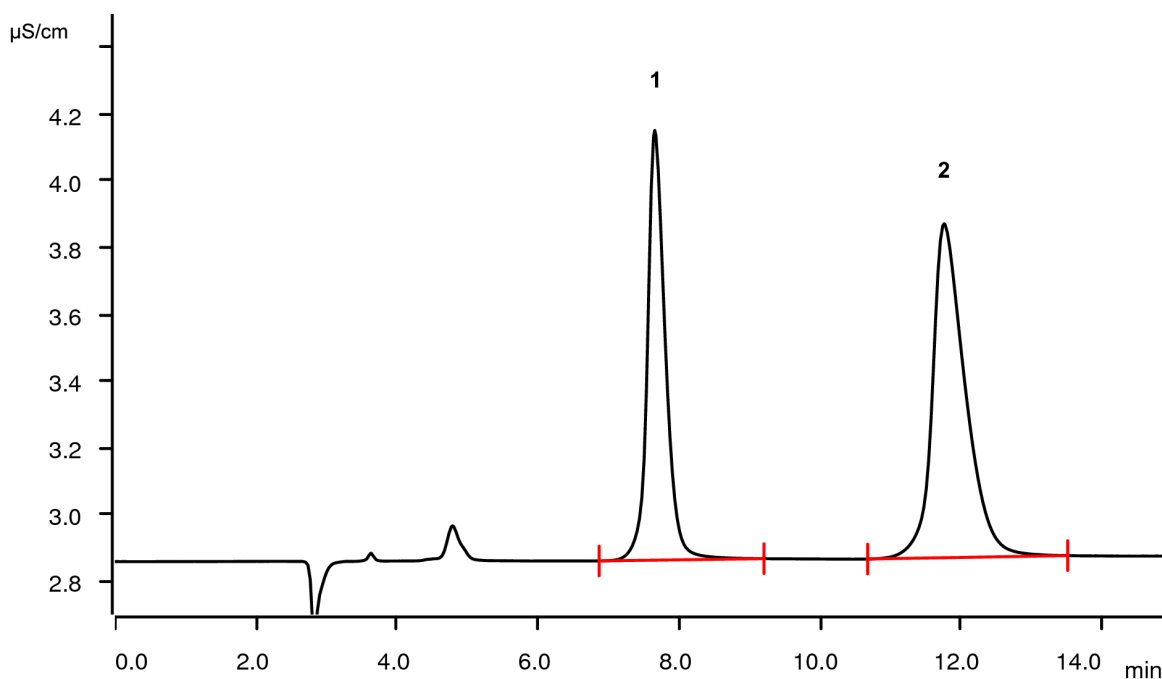


# Assay for citric acid/citrate and phosphate according to USP <345>

Column equivalency report: Metrosep A Supp 3 - 250/4.6 is equivalent to L61



Chromatogram of a mixed standard solution containing phosphate (1) and citrate (2).

In the course of USP column equivalency tests, the Metrosep A Supp 3 - 250/4.0 is applied for the assay of citric acid/citrate and phosphate according to USP general Chapter <345>. This report shows that the Metrosep A Supp 3 - 250/4.0 column is equivalent to packing L61 required in USP general Chapter <345>.

## Results

Anion	Concentration μg/mL	Tailing factor NMT 2.0	RSD area [% , N = 6] NMT 2.0
1 Phosphate	12.00	1.2	0.1
2 Citrate	20.00	1.2	0.3

### Sample

Mixed standard solution of phosphate and citrate.

### Sample preparation

No sample preparation is required.

### Columns

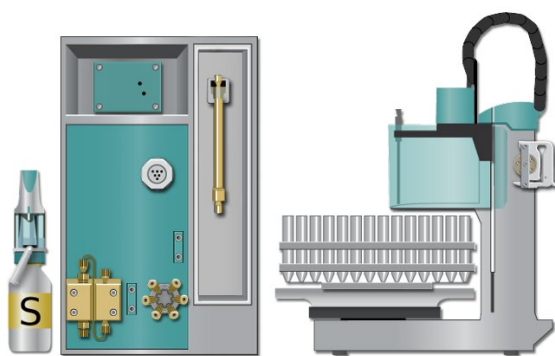
Metrosep A Supp 3 - 250/4.6	6.1005.320
Metrosep RP 2 Guard/3.5	6.1011.030

### Solutions

Eluent	20 mmol/L sodium hydroxide
Regenerant	500 mmol/L sulfuric acid
Suppressor rinsing	STREAM
Diluent	1.0 mmol/L sodium hydroxide

### Instrumentation

930 Compact IC Flex Oven/ChS/Deg	2.930.2260
IC Conductivity Detector	2.850.9010
858 Professional Sample Processor	2.858.0020
800 Dosino for DR	2.800.0010
IC equipment: Dosino regeneration	6.5330.190



### Parameters

Flow rate	1.0 mL/min
Injection volume	10 µL
P <sub>max</sub>	15 MPa
Column temperature	30 °C
Recording time	15 min

### Analysis

Chemically suppressed conductivity

### Chromatographic condition (different from USP <345>)

Parameter	USP	This method	Compl.
Column i.d.	4.0 mm ± 70%	4.6 mm	yes
Particle size	13 µm - 50%	9 µm	yes
Flow rate	2.0 mL/min ± 50%	1.0 mL/min	yes

NMT = not more than

### System suitability test for citrate

Tailing factor NMT = 2.0	1.3	pass
RSD (N = 6) NMT = 1.5	0.4%	pass

NMT = not more than

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