

# IC Application Note No. C-98

**Title:** Lanthanides by Ion Chromatography applying non-suppressed conductivity detection

**Summary:** Determination of traces of lutetium, ytterbium, thulium, erbium, terbium, gadolinium, samarium, neodymium, praseodymium, cerium and lanthanum using cation chromatography with direct conductivity detection.

**Sample:** Standard solution

**Sample Preparation:** Direct injection and preconcentration of 25 mL, respectively

**Column:** 6.1007.000 Nucleosil 100-5-SA

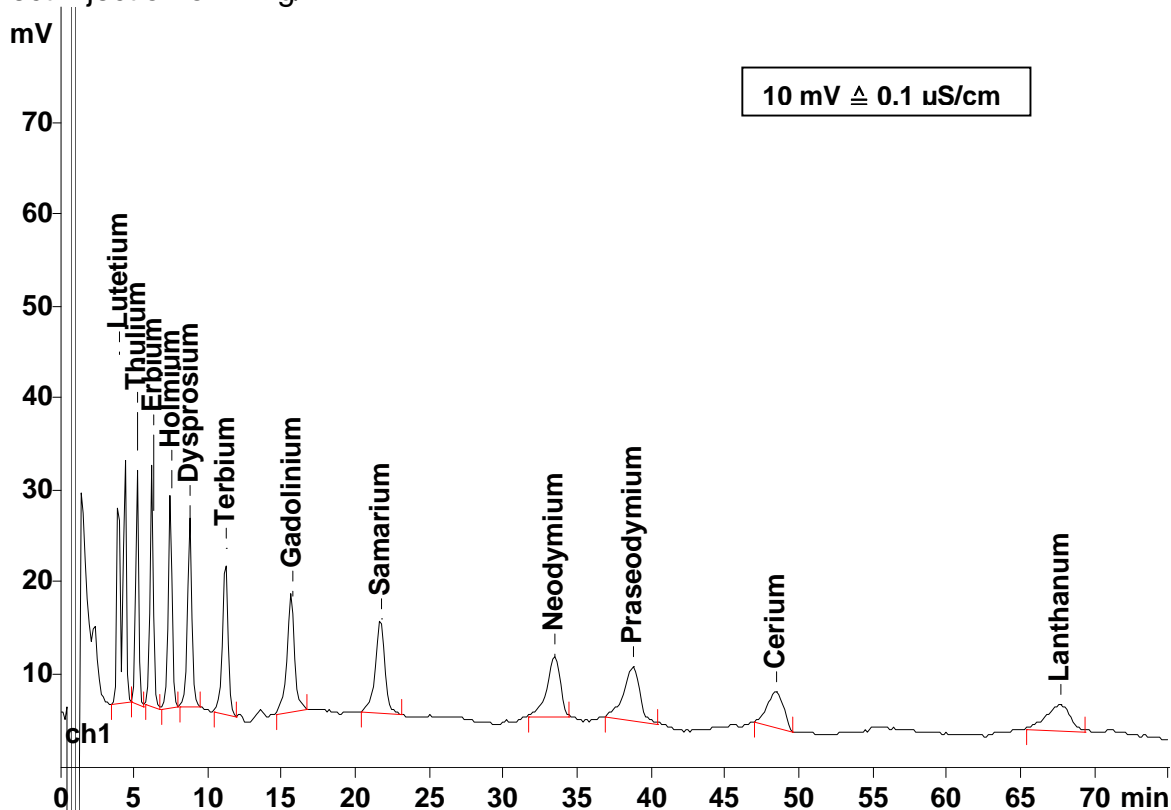
**Preconcentration column:** 6.1010.300 Metrosep C PCC1

**Eluent:** 10.0 mmol/L 2-hydroxyisobutyric acid  
2.0 mmol/L ethylene diamine (pH = 3.8)

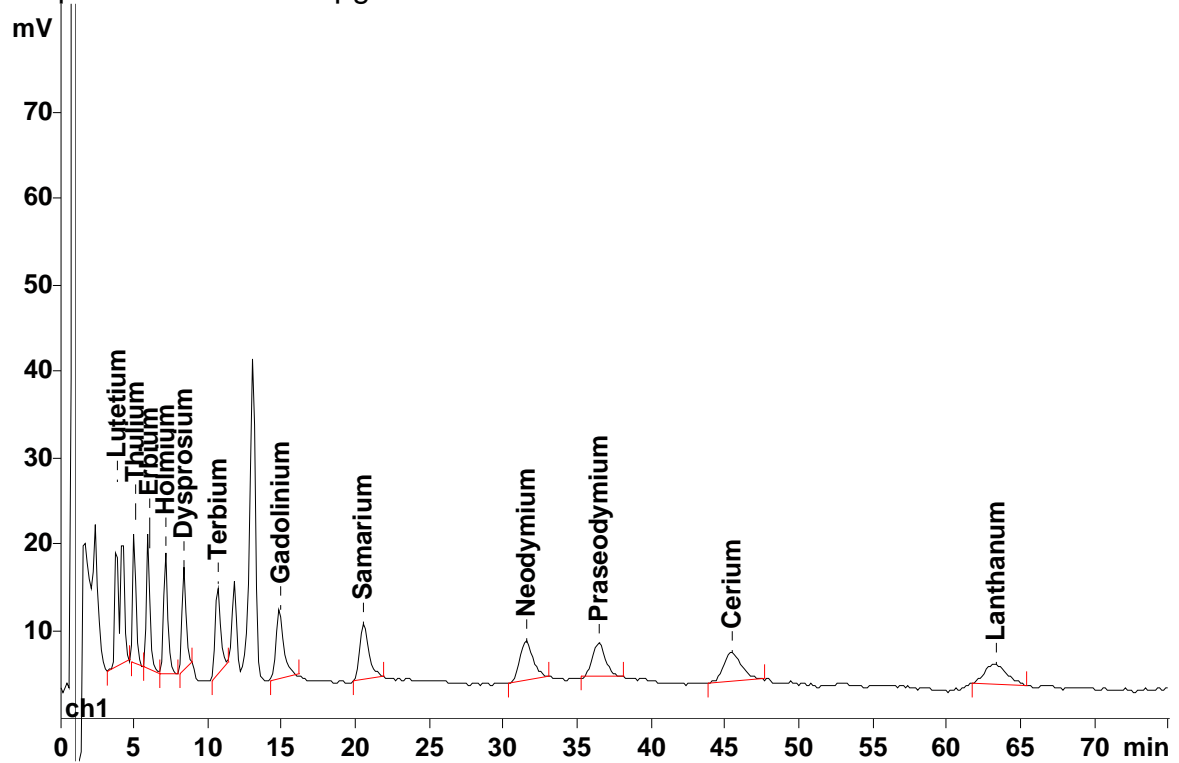
**Flow:** 1.5 mL/min

**Injection Volume:** 100  $\mu$ L / 25 mL pre-concentrated

Direct injection of 1 mg/L:



25 mL preconcentrated: 5 µg/L



<b>Lanthanides:</b> listed according to increasing retention time	Lutetium	Ytterbium not labeled in the chromatogram	Erbium	Thulium	Holmium	Dysprosium	Terbium
Direct [mg/L]	1	1	1	1	1	1	1
Preconc. [µg/L]	5	5	5	5	5	5	5

<b>Lanthanides:</b> listed according to increasing retention time	Gadolinium	Samarium	Neodymium	Praseodymium	Cerium	Lanthanum
Direct [mg/L]	1	1	1	1	1	1
Preconc. [µg/L]	5	5	5	5	5	5