

# IC Application Note No. C-106

**Title:** Lanthanides by ion chromatography with post-column reaction and UV/VIS detection

**Summary:** Determination of traces of lutetium, ytterbium, thulium, erbium, terbium, gadolinium, samarium, neodymium, praseodymium, cerium and lanthanum using cation chromatography with gradient elution and UV/VIS detection after post-column reaction with Arsenazo III.

**Sample:** Standard solution

**Sample Preparation:** None

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

**Eluent A:** 50 mmol/L  $\alpha$ -hydroxyisobutyric acid  
10 mmol/L ethylenediamine

**Eluent B:** Ultrapure water

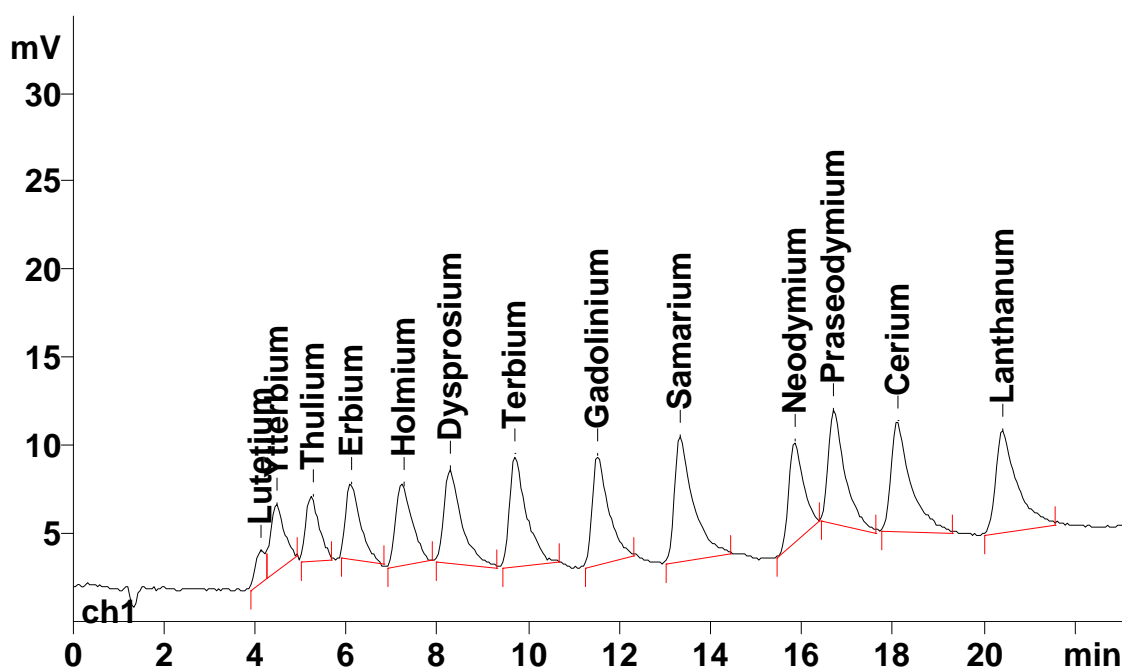
**PCR reagent:** 0.015% Arsenazo III, 0.1 mol/L phosphoric acid

**Wavelength:** 655 nm

**Flow:** 1.5 mL/min

**PCR Flow:** 0.5 mL/min

**Injection Volume:** 250  $\mu$ L



<b>Lanthanides:</b> listed according to increasing retention time	Lutetium mg/L	Ytterbium mg/L	Thulium mg/L	Erbium mg/L	Holmium mg/L	Dysprosium mg/L	Terbium mg/L
	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>

<b>Lanthanides:</b> listed according to increasing retention time	Gadolinium mg/L	Samarium mg/L	Neodymium mg/L	Praseodymium mg/L	Cerium mg/L	Lanthanum mg/L
	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>

### Gradient profile

Time (min)	0	5	25	27	30
Eluent A (%)	25	25	95	25	25
Eluent B (%)	75	75	5	75	75