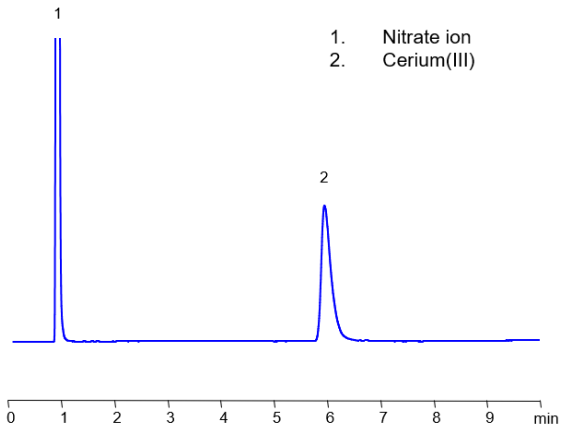
HPLC Method for Analysis of Cerium(III) Nitrate on Newcrom AH Column



Column:	Newcrom AH
Column size:	4.6 × 100 mm, 5 µm, 100A
Column part number:	NAH-46.100.0510
Mobile phase:	Gradient MeCN – 50-70%
Buffer:	Gradient AmFm pH 3.0 – 20-60 mM
Gradient time:	10 min
Flow rate:	1.0 mL/min
Detection:	ELSD, 50C

Separation type: Liquid Chromatography Mixed-mode

Cerium(III) is a specific oxidation state of the element cerium, which is a lanthanide and a rare-earth metal.

Cerium(III) compounds are often used in a variety of applications. For example, cerium(III) chloride (CeCl3) is a common starting material for the preparation of other cerium-containing compounds and is often used as a reducing agent in organic chemistry. Cerium(III) oxide (Ce2O3), also known as cerous oxide, is used in ceramics and to polish glass.

Cerium(III) nitrate is often used in the laboratory as a cerium(III) source because it is relatively stable and easy to handle. It can be used in a variety of reactions, such as the preparation of other cerium compounds or as a catalyst or co-catalyst in organic reactions.

Cerium(III) Nitrate can be retained and analyzed on a mixed-mode Newcrom AH, 4.6 x 100 mm, 5 µm, 100 Å, dual ended column with a mobile phase consisting of water, Acetonitrile (MeCN), and Ammonium Formate. This analysis method can be detected with an Evaporative Light Scattering Detector (ELSD) or any other evaporative detection method (CAD, ESI-MS).

LOD was determined for this combination of instrument, method, and analyte, and it can vary from one laboratory to another even when the same general type of analysis is being performed.

Method Parameters

Column	Newcrom AH, 4.6 x 100 mm, 5 µm, 100 Å, dual ended
Mobile Phase	Gradient MeCN -50-70%, 10 min
Buffer	Gradient AmFm pH 3.0 – 30-60 mM, 10 min
Flow Rate	1.0 mL/min
Detection	ELSD, 50C
Limit of Detection	0.2 ppm

Quelle: https://sielc.com/hplc-separation-of-cerium