

ISO 4702:2024-12 (E)

Water quality - Zirconium 93 - Test method using ICP-MS

Contents

Page

Foreword.....	iv
Introduction.....	v
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions.....	2
4 Symbols.....	2
5 Principle.....	3
6 Sampling and sample storage.....	5
7 Chemical reagents and apparatus.....	5
7.1 General.....	5
7.2 Chemical reagents.....	5
7.3 Apparatus.....	6
8 Chemical separation.....	6
9 Quality control.....	6
9.1 General.....	6
9.2 Variables that can influence the measurement.....	6
9.3 Instrument verification.....	7
9.4 Method verification.....	8
10 Expression of results.....	8
10.1 Data analysis.....	8
10.2 Background.....	8
10.3 Internal standard.....	8
10.4 Expression of results using ¹⁷⁸ Hf as a recovery tracer.....	9
10.4.1 Calculation of activity of tracer and mass of analyte.....	9
10.4.2 Measurement bias.....	9
10.4.3 Sample mass concentration.....	10
10.5 Expression of results using ⁹⁵ Zr as a recovery tracer.....	10
10.5.1 Calculation of activity of tracer and mass of analyte.....	10
10.5.2 Chemical recovery.....	10
10.5.3 Measurement bias.....	11
10.5.4 Sample mass concentration.....	11
10.6 Limit of detection.....	11
10.7 Limit of quantification.....	12
10.8 Correcting for ⁹³ Zr contamination in the tracer.....	12
10.9 Conversion of mass concentration to mass activity.....	12
10.10 Conversion from mass to volume units.....	12
11 Test report.....	13
Annex A (informative) Chemical separation of zirconium.....	14
Bibliography.....	16