

ISO 22125-2:2019-11 (E)

Water quality - Technetium-99 - Part 2: Test method using inductively coupled plasma mass spectrometry (ICP-MS)

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms, definitions and symbols	2
4	Principle	4
5	Sampling, handling and storage	4
6	Procedure	4
6.1	Sample preparation for measurement	4
6.2	Sample measurement	5
7	Quality assurance and quality control program	5
7.1	General	5
7.2	Variables that could influence the measurement	5
7.3	Instrument verification	5
7.4	Contamination	5
7.5	Interference control	6
7.6	Method verification	6
7.7	Demonstration of analyst capability	6
8	Expression of results	6
8.1	Using Re, ⁹⁷ Tc, or ⁹⁸ Tc as a recovery tracer	6
8.1.1	Calculation of mass of tracer and analyte added	6
8.1.2	Measurement bias	7
8.1.3	Sample mass concentration	7
8.1.4	Detection limit	8
8.1.5	Limit of quantification	8
8.2	Using ^{95m} Tc, ^{97m} Tc or ^{99m} Tc as a recovery tracer	8
8.2.1	Calculation of activity of tracer, mass of analyte and mass of internal standard added	8
8.2.2	Purification step recovery	9
8.2.3	Measurement bias	9
8.2.4	Sample mass concentration	9
8.2.5	Detection limit	9
8.2.6	Limit of quantification	10
8.2.7	Conversion of mass concentration to activity concentration	10
8.2.8	Conversion of mass concentration to volume unit	10
8.3	Correction for the presence of ⁹⁹ Tc in the tracer	11
9	Test report	11
Annex A (informative) Method 1 – TEVA resin		12
Annex B (informative) Method 2 – TRU resin		15

Annex C (informative) Method 3 -- Anion exchange resin	18
Bibliography	21