

ISO 23655-2:2022-09 (E)

Water quality - Nickel-59 and nickel-63 - Part 2: Test method using ICP-MS

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms, definitions and symbols	2
3.1	Terms and definitions	2
3.2	Symbols	2
4	Principle	4
5	Reagents	4
5.1	Standard solutions	4
5.1.1	Nickel-59 and ⁶³ Ni standards	4
5.1.2	Stable nickel standards	5
5.2	Holdback carrier	5
5.3	Water	5
5.4	Specific reagents for chemical separation	5
6	Equipment	6
6.1	Laboratory equipment for direct evaporation	6
6.2	Mass spectrometry vials	6
6.3	Measurement equipment: Inductively coupled plasma mass spectrometry	6
7	Sampling	6
8	ICP-MS setup and calibration	6
8.1	Background	6
8.2	Calibration	7
8.3	Mass bias	7
8.4	Background signal	7
9	Procedure	8
9.1	Preliminary	8
9.1.1	Stable element interferences content [12]	8
9.1.2	Iron and nickel separation	8
9.2	Nickel measurement solution preparation	8
10	Quality control	9
11	Expression of results	9
11.1	Nickel recovery	9
11.2	Nickel-59 activity calculation	10
11.3	Nickel-63 activity calculation	10
11.4	Uncertainties and characteristic limits [14]	10
11.4.1	Nickel-59 measurements	10
11.4.2	Nickel-63 measurements	11
12	Test report	11

Annex A (normative) Isolation and purification of nickel	13
Bibliography	15