ISO 19361:2025-07 (E)

Measurement of radioactivity - Determination of beta emitters activities - Test method using liquid scintillation counting

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Terms,definitions 2

4 Symbols 2

5 Principle 3

6 Reagents and equipment 3
6.1 Reagents 3
6.1.1 Blank material 3
6.1.2 Calibration source solutions 4
6.1.3 Scintillation cocktail 4
6.1.4 Quenching agent 4
6.2 Equipment 5
6.2.1 General 5
6.2.2 Liquid scintillation counter 5
6.2.3 Counting vials 5

7 Sampling and samples 5
7.1 Sampling 5
7.2 Sample storage 6

8 Procedure 6
8.1 Determination of background 6
8.2 Determination of counting efficiency 6
8.3 Quench correction 6
8.4 Sample preparation 7
8.5 Preparation of the scintillation sources to be measured 7
8.6 Counting procedure 8
8.6.1 Control and calibration 8
8.6.2 Measurement conditions 8
8.6.3 Interference control 8

9 Expression of results 9
9.1 General 9
9.2 Calculation of activity concentration, without sample treatment prior to measurement 9
9.3 Decision threshold, without sample treatment prior to measurement 10
9.4 Detection limit, without sample treatment prior to measurement 10
9.5 Limit of coverage interval 11
9.5.1 Limits of the probabilistically symmetric coverage interval 11
9.5.2 Limits of the shortest coverage interval 11
9.6 Calculations using the activity per unit of mass, without sample treatment prior to measurement 12
10 Test report 12

Annex A (informative) Internal standard method 13

Annex B (informative) TDCR liquid scintillation counting 15

Annex C (informative) Cerenkov measurement with liquid scintillation and TDCR counter 18

Bibliography 21