ISO/TS 13530:2009-03 (E)

Water quality - Guidance on analytical quality control for chemical and physicochemical water analysis

Contents

Page

Foreword iv

1 Scope 1

2 Normative references 1

3 Terms and definitions 2
3.1 Terms related to measurement methods 2
3.2 Terms related to measurement results 3
3.3 Terms related to uncertainty 5

4 Performance characteristics of analytical systems 5
4.1 Introduction 5
4.2 Scope of the method 6
4.3 Calibration 6
4.4 Limit of detection, limit of quantification 10
4.5 Interferences and matrix effects 12
4.6 Accuracy (trueness and precision) and uncertainty of measurement 14
4.7 Robustness 14
4.8 Fitness for purpose 15

5 Choosing analytical systems 15
5.1 General considerations 15
5.2 Practical considerations 16

6 Intralaboratory quality control 16
6.1 General 16
6.2 Terms relating to within-laboratory quality control 17
6.3 Control of accuracy 17
6.4 Control of trueness 18
6.5 Control of precision 19
6.6 Principles of applying control charts 21
6.7 Conclusions 25
6.8 Control charts with fixed quality criterions (target control charts) 27

7 Quality control in sampling 27

8 Interlaboratory quality control 28

9 Quality control for lengthy analytical procedures or analysis undertaken infrequently or at an ad hoc basis 28
9.1 Quality control for lengthy analytical procedures 28
9.2 Analysis undertaken infrequently or on an ad hoc basis 29

Annex A (informative) Verification of the limit of detection and the limit of quantification 30

Annex B (informative) The nature and sources of analytical errors 32

Annex C (informative) Estimating the measurement uncertainty 35

Annex D (informative) Example for performing quality control for lengthy analytical procedures 37

Bibliography 38