DIN EN 15852:2010-11 (E)

Ambient air quality - Standard method for the determination of total gaseous mercury

Contents

Page

Foreword 4

1 Scope 5

2 Normative references 5

3 Terms and definitions 5

4 Symbols and abbreviated terms 8
4.1 Symbols 8
4.2 Abbreviations 11

5 Principle 11

6 Requirements 12
6.1 Siting criteria 12
6.2 Method requirements 12
6.3 Method detection limit 12
6.4 Field operation and quality control 12

7 Reagents 12

8 Apparatus 13
8.1 Sampling equipment 13
8.2 Analytical instrumentation 13
8.3 Calibration equipment 13

9 Sampling considerations 14
9.1 Inlet location 14
9.2 Sampling inlet and sampling line 14
9.3 Measurement time 15

10 Measurement procedure 16
10.1 Calibration with AFS/AAS 16
10.2 Calibration with Zeeman AAS 17

11 Quality control 17
11.1 Calibration robustness check 17
11.2 Zero gas check 18
11.3 Degradation of gold traps 18
11.4 Proficiency testing scheme 18
11.5 Accreditation 18
11.6 Measurement uncertainty 18

12 Calculation of results 18
12.1 General 18
12.2 Calculation of TGM concentrations to reference conditions 19
12.3 Method detection limit 20
12.4 Repeatability 20
12.5 Drift in instrument sensitivity 21

13 Estimation of the measurement uncertainty method and performance criteria 21

13.1 Introduction 21
13.2 Assessment against target measurement uncertainty for individual laboratories 22
13.3 Use of uncertainties in reporting of results 23

14 Performance characteristics determined in field tests 24

15 Interferences 24
15.1 General 24
15.2 Mercury analyser based on amalgamation and CVAAS or CVAFS 24
15.3 Mercury analyser based on Zeeman AAS 25

16 Reporting of results 25

Annex A (informative) Sampling sites 26

Annex B (informative) Manual method TGM 27

Annex C (informative) Summary of field validation tests 29

Annex D (informative) Characteristics of the mercury vapour source 34

Annex E (informative) Calibration 37

Annex F (informative) Assessment against target uncertainty by an individual laboratory 38

Annex G (informative) Relationship between this European Standard and the Essential Requirements of EU Directives 44

Bibliography 45