

DIN EN 13205-4:2014-09 (E)

Workplace exposure - Assessment of sampler performance for measurement of airborne particle concentrations - Part 4: Laboratory performance test based on comparison of concentrations

Contents

	Page
Foreword	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Symbols and abbreviations	6
4.1 Symbols	6
4.1.1 Latin	6
4.1.2 Greek	8
4.2 Enumerating subscripts	8
4.3 Abbreviations	8
5 Principle	9
6 Test method	9
6.1 General	9
6.2 Test conditions	9
6.3 Test variables	10
6.3.1 General	10
6.3.2 Particle size	11
6.3.3 Wind speed	12
6.3.4 Wind direction	12
6.3.5 Aerosol composition	12
6.3.6 Collected mass or internally separated mass	12
6.3.7 Specimen variability	12
6.3.8 Excursion from the nominal flow rate	12
7 Experimental requirements	13
8 Calculation of sampler bias and expanded uncertainty	14
8.1 Sampler bias	14
8.2 Correction factor	15
8.3 Sources of uncertainty (of measurement)	15
8.3.1 Principle	15
8.3.2 Test aerosol concentration, as determined using the validated sampler(s)	15
8.3.3 Validated sampler	16
8.3.4 Candidate sampler bias	16
8.3.5 Individual candidate sampler variability	17
8.3.6 Excursion from the nominal flow rate	17
8.4 Combined standard uncertainty	19
8.4.1 General	19
8.4.2 Candidate sampler without any coupling between the flow rate and internal penetration ..	19
8.4.3 Candidate sampler with a coupling between the flow rate and internal penetration ..	20
8.4.4 Combined uncertainty per influence variable value	20

8.4.5	Distinction between different values of the influence variables	21
8.4.6	Non-distinction between different values of the influence variables	21
8.5	Expanded uncertainty	22
9	Test report	22
9.1	General	22
9.2	Testing laboratory details and sponsoring organisation	23
9.3	Description of the candidate sampler and validated sampler	23
9.4	Critical review of sampling process	23
9.5	Test facilities	23
9.6	Details of experimental design	24
9.7	Presentation of experimental results	24
9.8	Data analysis	24
9.9	Candidate sampler performance	24
9.10	Summary and information for the user of the sampler	25
	Bibliography	26