

DIN EN ISO 21832:2020-08 (E)

Workplace air - Metals and metalloids in airborne particles - Requirements for evaluation of measuring procedures (ISO 21832:2018)

Contents		Page
European foreword		3
Foreword		4
Introduction		5
1	Scope	6
2	Normative references	6
3	Terms and definitions	6
4	Principle	7
5	Requirements	8
5.1	Method description.....	8
5.1.1	Application range.....	8
5.1.2	Method performance.....	8
5.1.3	Safety information.....	8
5.1.4	Samplers.....	8
5.1.5	Sampling pumps.....	9
5.1.6	Other requirements.....	9
5.2	Performance requirements.....	9
5.2.1	Limit of quantification (LOQ).....	9
5.2.2	Analytical recovery.....	9
5.2.3	Expanded uncertainty.....	9
6	Reagents and materials	10
6.1	Reagents.....	10
6.2	Standard solutions.....	10
6.3	Test materials.....	10
6.4	Reference air samples.....	10
7	Apparatus	10
8	Test methods	11
8.1	LOD and LOQ.....	11
8.1.1	Instrumental detection limit (IDL).....	11
8.1.2	Method LOD and LOQ.....	11
8.2	Analytical recovery.....	11
8.2.1	General.....	11
8.2.2	Measuring procedures for soluble compounds of metals and metalloids.....	12
8.2.3	Measuring procedures for total metals and metalloids that involve sample dissolution.....	12
8.2.4	Measuring procedures that do not involve sample dissolution.....	13
8.3	Measurement uncertainty.....	13
8.3.1	Identification of random and non-random uncertainty components.....	13
8.3.2	Estimation of individual uncertainty components.....	13
8.3.3	Calculation of expanded uncertainty.....	14
9	Test report	14
Annex A (informative) Guidance on determination of analytical recovery		16
Annex B (informative) Experiments for method validation		18
Annex C (informative) Estimation of uncertainty of measurement		19
Annex D (informative) Interpolation of standard deviation		35
Annex E (informative) Example for estimation of expanded uncertainty		37
Bibliography		41