

DIN EN 17199-2:2019-12 (E)

Workplace exposure - Measurement of dustiness of bulk materials that contain or release respirable NOAA or other respirable particles - Part 2: Rotating drum method

Contents	Page
European foreword.....	4
Introduction	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions	7
4 Symbols and abbreviations	7
5 Principle	8
6 Equipment	9
6.1 Test apparatus for the determination of the inhalable, thoracic and respirable dustiness mass fractions	9
6.2 Test apparatus.....	10
6.2.1 General.....	10
6.2.2 Rotating drum	12
6.2.3 Isokinetic flow splitter	12
6.2.4 Conductive or steel tubing.....	13
6.2.5 Cyclone for the respirable dust fraction or impactor pre-selector.....	13
6.2.6 Direct-reading time-resolving aerosol instrument for particle number concentration, with a detectable particle size range from 10 nm to 1 µm.....	13
6.2.7 Direct-reading time- and size-resolving aerosol instrument for time-averaged number-based particle size distribution.....	13
6.2.8 Aerosol sampler for analytical electron microscopy analysis.....	14
7 Requirements	14
7.1 General.....	14
7.2 Engineering control measures	14
7.3 Conditioning of the test material.....	15
7.4 Conditioning of the test equipment.....	15
8 Preparation	15
8.1 Test sample	15
8.2 Moisture content of the test material	15
8.3 Bulk density of the test material	15
8.4 Preparation of test apparatus	15
8.5 Aerosol instruments and aerosol samplers.....	16
9 Test procedure.....	16
10 Evaluation of data	18
10.1 Respirable, thoracic and inhalable dustiness mass fraction.....	18
10.2 Number-based dustiness index, number-based emission rate and modal aerodynamic equivalent diameters of the number-based particle size distribution	19
10.2.1 General.....	19
10.2.2 Number-based dustiness index.....	19
10.2.3 Number-based emission rate.....	19
10.2.4 Modal aerodynamic equivalent diameters of the number-based particle size distribution	20

10.3	Morphological and chemical characterisation of the particles.....	21
11	Test report	21
Annex A (informative)	Example of some parts of the rotating drum apparatus	23
Bibliography	24