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 dru m 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**