

DIN EN 17199-1:2019-12 (E nglisch)

Workplace exposure - Measurement of dustiness of bulk materials th at contain or release respirable NOAA and other respirable particles - Part 1: R equirements and choice of test methods

Contents	Page
European foreword.....	4
Introduction	5
1 Scope.....	7
2 Normative references.....	7
3 Terms and definitions	8
4 Symbols and abbreviations	9
5 Principle	10
5.1 General.....	10
5.2 Metric and measurand	12
5.3 Choice of time-resolving and size-resolving instruments and samplers.....	14
5.3.1 General.....	14
5.3.2 Determination of health related dustiness mass fractions.....	16
5.3.3 Determination of number-based dustiness indices and number-based emission rates	16
5.3.4 Determination of the number of modes and the modal aerodynamic equivalent diameter(s) of the time-averaged number-based particle size distribution	17
5.3.5 Determination of the number of modes and the modal aerodynamic equivalent diameters of the time-averaged particle mass-based particle size distribution	17
5.3.6 Morphological and chemical characterization of the collected airborne particles	18
6 General requirements	19
6.1 Conditioning of the test material.....	19
6.1.1 General.....	19
6.1.2 Conditioning specifications	19
6.1.3 As-received condition.....	19
6.2 Conditioning of the test equipment.....	19
6.3 Sampling from bulk material.....	20
6.4 Moisture content	20
6.5 Bulk density	20
6.6 Test procedure	20
6.7 Replicate tests	20
7 Test methods	21
7.1 Available test methods.....	21
7.1.1 General.....	21
7.1.2 Rotating drum and small rotating drum method	21
7.1.3 Vortex shaker	21
7.1.4 Continuous drop method.....	21
7.2 General considerations.....	22
7.3 Selection of the most appropriate test method.....	22
8 Evaluation of dustiness data	23
9 Test report.....	23
Annex A (normative) Determination of moisture content.....	25
A.1 Infrared dryer method	25

A.1.1 Principle.....	25
A.1.2 Procedure.....	25
A.2 Alternative method.....	26
Annex B (normative) Determination of bulk density of the test material in accordance to EN 15051-1.....	27
B.1 Equipment.....	27
B.2 Special requirements	27
B.3 Procedure	27
Annex C (informative) Report for electron microscopy	28
C.1 Methodology information.....	28
C.1.1 Description of collection substrate	28
C.1.2 Sampler for electron microscopy analysis	28
C.1.3 Preparation for EM analysis	28
C.1.4 General information about the microscope.....	28
C.2 Results of observations and recording of images and spectra.....	29
Bibliography	30