

DIN EN 17199-4:2020-02 (E)

Workplace exposure - Measurement of dustiness of bulk materials that contain or release respirable NOAA or other respirable particles - Part 4: Small 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		10
6.1 General.....		10
6.2 Test apparatus.....		10
7 Requirements		13
7.1 General.....		13
7.2 Engineering control measures		14
7.3 Conditioning of the test material.....		14
7.4 Conditioning of the test equipment.....		14
8 Preparation		14
8.1 Weighing of filters.....		14
8.2 Test sample		14
8.3 Moisture content of the test material		15
8.4 Bulk density of the test material		15
8.5 Preparation of test apparatus		15
8.6 Aerosol instruments and aerosol samplers.....		15
9 Test procedure		16
9.1 General.....		16
9.2 Test sequence for running a dustiness test		17
9.3 Selection of the amount to be used for SRD dustiness triple test		18
9.3.1 General.....		18
9.3.2 Selection of 6 g test material.....		19
9.3.3 Selection of more than 6 g test material		19
9.3.4 Selection of less than 6 g test material		20
9.4 Cleaning in between runs.....		20
9.5 Cleaning of equipment after conclusion of a dustiness test		21
10 Evaluation of data		21
10.1 Respirable dustiness mass fraction.....		21
10.2 Use of CPC data.....		21
10.2.1 General.....		21
10.2.2 Number-based emission rate.....		22
10.2.3 Number-based dustiness index.....		22
10.2.4 Dustiness kinetics		23
10.2.5 Time needed to reach 50 % of the released number of particles during the test		23
10.3 Use of ELPI® data		23
10.3.1 General.....		23

10.3.2 Modal aerodynamic equivalent diameters obtained by ELPI® (aerodynamic D_p, μm)	23
10.4 Morphology and chemical characterization of the particles	24
11 Test report	24
Annex A (informative) Example of a small rotating drum set-up	26
Bibliography	27