

# 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

---

<b>Contents</b>	<b>Page</b>
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

<b>10.3.2 Modal aerodynamic equivalent diameters obtained by ELPI® (aerodynamic <math>D_p</math>, <math>\mu\text{m}</math>)</b> .....	<b>23</b>
<b>10.4 Morphology and chemical characterization of the particles</b> .....	<b>24</b>
<b>11 Test report</b> .....	<b>24</b>
<b>Annex A (informative) Example of a small rotating drum set-up</b> .....	<b>26</b>
<b>Bibliography</b> .....	<b>27</b>