DIN EN ISO 28439:2011-07 (E)

Workplace atmospheres - Characterization of ultrafine aerosols/nanoaerosols - Determination of the size distribution and number concentration using differential electrical mobility analysing systems (ISO 28439:2011)

Contents

Page

Foreword 3

Introduction 4

1 Scope 5

2 Normative references 5

3 Terms and definitions 5

4 Symbols and abbreviated terms 6
4.1 Symbols 6
4.2 Abbreviated terms 7

5 Principle 7

6 Equipment 8
6.1 General 8
6.2 Sampling line 8
6.3 Pre-separator 9
6.4 Particle charge conditioner 9
6.5 DEMC 9
6.6 Aerosol particle detector 9

7 Measurement strategy 10

8 Measuring procedure 10
8.1 Preparation 10
8.2 Sampling 11

9 Presentation and evaluation of data 11

10 Check of DMAS performance 12
10.1 Check on particle classification 12
10.2 Check on particle number-counting efficiency 12

11 Problems and errors 12
11.1 CPC (CNC) counting efficiency 12
11.2 Particles with multiple charges 13
11.3 Sampling losses 13
11.4 Uncertainties 14
11.5 Overloading 15
11.6 Sampling of fibres 15
11.7 Humidity 15
11.8 Maintenance 15

Annex A (informative) Methods for determining exposure 16

Annex B (informative) List of manufacturers (non-comprehensive) 17

Bibliography 18