

ISO/TS 21361:2025-03 (E)

Nanotechnologies - Method to quantify air concentrations of carbon black and amorphous silica in the nanoparticle size range in a mixed dust manufacturing environment

Contents	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Abbreviations	2
5 Principle	2
6 Reagents	3
7 Apparatus	4
7.1 Air sampling — Equipment and consumable supplies.....	4
7.1.1 Electrical low cascade pressure impactor (ELPCI).....	4
7.1.2 Limit of detection (LOD).....	4
7.1.3 Real-time aerosol monitor.....	5
7.1.4 Vacuum pump.....	5
7.1.5 Polycarbonate substrate.....	5
7.1.6 Hydrocarbon grease.....	6
7.2 Analytical/microscopy laboratories.....	6
7.3 Sample analysis — Equipment and consumables.....	6
7.3.1 Transmission electron microscope (TEM).....	6
7.3.2 Energy dispersive spectrometry (EDS).....	6
7.3.3 TEM grid.....	6
8 Air sample collection	6
8.1 Sampling procedure.....	6
8.2 Determination of sampling time.....	6
8.3 Sample collection procedure.....	7
9 Procedure for analysis	7
9.1 General.....	7
9.2 Preparation of substrates.....	7
9.3 Sample analysis.....	8
9.3.1 Instrument conditions.....	8
9.3.2 Data collection.....	8
9.4 Calculation of air concentration.....	9
10 Uncertainties and performance criteria	10
10.1 General.....	10
10.2 Particle counting with the electrical low pressure cascade impactor (ELPCI).....	10
10.3 Particle analysis with transmission electron microscopy (TEM) and energy dispersive spectrometry (EDS).....	11
11 Test report	11
Annex A (informative) Case study overview	12
Bibliography	13