

ISO/TS 21361:2019 (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

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