



SAMPLING SOLUTIONS

For Nanomaterial Exposure
Assessments

Recognition

Engineered nanoparticles are intentionally produced for a specific application and have *at least one dimension* between 1 and 100 nanometers. Because of their unique physical and chemical properties, nanoparticles are used extensively in a variety of industrial and consumer products. Research is ongoing into the health hazards of engineered nanomaterials, but U.S. NIOSH has provided some specific guidance on assessing the risks in the recently published Refinement of the Nanoparticle Emission Assessment Technique into the Nanomaterial Exposure Assessment Technique ([NEAT 2.0](#)).

SKC offers solutions for active sampling of nanoparticle exposure. Active samplers require an air sample pump to collect particulate matter in air.

See the SKC equipment recommended for nanoparticle exposure evaluations.

Evaluation with SKC Sampling Solutions

For over 50 years, SKC has led the research, design, and manufacture of quality sampling equipment and media to aid health and safety professionals in the evaluation of occupational and environmental hazards.

Choose from the many SKC sampling solutions for nanoparticle exposure evaluation, including air sample pumps, filter cassettes, and size-selective samplers following agency methods and established protocols.

See reverse side for specific method and sampling equipment/media information.

Sample Collection

Active Air Sampling Solutions

Target Compound or Parameter	Select Methods*	SKC Sample Collection Media and Cat. No.	SKC Sample Pump and Cat. No.	Notes
Carbon nanotubes (CNTs) and nanofibers (CNFs)	NIOSH 5040	Preloaded quartz filter cassette 225-401-25 and GS-3 Single-inlet Cyclone 225-103 or Aluminum Cyclone 225-01-01	AirChek® TOUCH 220-5000TC	NIOSH NEAT 2.0 requires a sample onto 25-mm quartz filters for analysis of elemental carbon by NIOSH 5040 (see left) and a second sample onto an open-face 25-mm MCE filter for electron microscopy.
		Quartz filter 225-1827 with Parallel Particle Impactor at 4 or 8 L/min, 225-387 or 225-384	AirChek TOUCH 220-5000TC (4 L/min) Or Leland Legacy® 100-3002K (8 L/min)	
Nanosized (ultra-fine) titanium dioxide	NIOSH 0600 gravimetric NIOSH 7300 for metals	Prewieghed PVC filter 225-8208 and Aluminum Cyclone 225-01-02 Preloaded MCE filter 225-3-01	AirChek TOUCH 220-5000TC	PVC filter allows for both gravimetric and chemical analysis. NIOSH NEAT 2.0 uses standard NIOSH methods to collect a respirable dust sample onto PVC filters for gravimetric analysis (see left). A second sample is required if results exceed the NIOSH REL comprising a 25-mm MCE filter sample for elemental analysis by NIOSH 7300. A third sample uses an open-face 25-mm MCE filter for electron microscopy.
Nanoparticle morphology	NIOSH 7402	Preloaded MCE filter cassette 225-321	AirChek TOUCH 220-5000TC or Leland Legacy 100-3002K	
Particle size studies	—	Sioutas Personal Cascade Impactor 225-370 with four PTFE collection substrates 225-3708 and one PTFE after-filter 225-1709	Leland Legacy 100-3002K	

* Other methods may apply. SKC recommends those listed.

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