



Product News

Particle Testing Authority: comprehensive Contract Testing Service for Additive Manufacturing Powders

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Norcross (GA), United States - [Particle Testing Authority](#), Micromeritics' ISO17025 accredited contract testing laboratory today announced a comprehensive physical characterization service for the additive manufacturing (AM) industry that provides fast and efficient access to the techniques routinely used to optimize process performance and the attributes of finished products.

Relevant characteristics of AM powders – metals, polymers, and other materials – include:

- Particle size and shape
- Density
- Porosity
- Bulk powder flowability
- Surface area and topography
- Environmental stability

ParticleTesting Authority (PTA) quantifies all these characteristics using state-of-the-art instrumentation backed by in-depth materials characterization knowledge. The resulting service provides remarkable value for AM powder developers, manufacturers and users looking to augment, enhance or replace in-house analytical services with a more effective approach. ParticleTesting Authority (PTA)

quantifies all these characteristics using state-of-the-art instrumentation backed by in-depth materials characterization knowledge. The resulting service provides remarkable value for AM powder developers, manufacturers and users looking to augment, enhance or replace in-house analytical services with a more effective approach. “We provide more comprehensive testing for AM powders than many in the industry can sustain in an in-house lab,” said Greg Thiele, General Manager of PTA. “For example, in addition to high resolution laser diffraction particle sizing we offer other techniques such as gravity sedimentation which can help to elucidate particle size distribution, to robustly quantify the fine and coarse fractions that can be crucial to powder performance. We also use the [Freeman FT4 Powder Rheometer](#)[®], an instrument used by leaders in the industry to sensitively differentiate the bulk flowability of AM powders in a way that correlates directly with printing performance.” The properties that PTA measure for AM powders influence or quantify how they will flow, pack and respond to thermal energy – melting or sintering. These are the characteristics that define processability, whether a powder will print and the throughput that can be achieved, and critical attributes of the finished product, such as resolution, strength and porosity. The resulting data support the development of new powders for specific printers, the effective differentiation of supplies, powder choice for a new application and the evolution of effective powder management and recycling strategies. “Powder-based AM processes are exacting, and competing effectively relies on the application of a fairly extensive analytical toolkit.”, said Greg Thiele. “We’re delighted to be able to offer access to all the instrumentation required along with the know-how required to generate relevant data of exemplary quality. Buying analytical services can be extremely cost-effective when costs are robustly assessed against the expense of maintaining a full in-house capability, or worse, not being able to reliably predict or elucidate AM powder performance.”