



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Laboratory of:

Particle Technology Labs
555 Rogers Street, Downers Grove, IL 60515

(Hereinafter called the Organization) and hereby declares that Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2017

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (as outlined by the joint ISO-ILAC-IAF Communiqué dated April 2017):

Mechanical Testing
(As detailed in the supplement)

Accreditation claims for such testing and/or calibration services shall only be made from addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

For PJLA:

Tracy Szerszen
President/Operations Manager

Perry Johnson Laboratory
Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

Initial Accreditation Date:

July 4, 2018

Revision Date:

June 24, 2019

Issue Date:

July 4, 2018

Accreditation No.:

98927

Expiration Date:

October 31, 2020

Certificate No.:

L18-321-R1

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjilabs.com



Certificate of Accreditation: Supplement

Particle Technology Labs

555 Rogers Street, Downers Grove, IL 60515
 Contact Name: Amy Ganden Phone: 630-969-2703

Accreditation is granted to the facility to perform the following testing:

FIELD OF TEST	ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	RANGE (WHERE APPROPRIATE) AND DETECTION LIMIT	
Mechanical ^F	Particle Size	Particle Size Analysis - Laser Diffraction Methods	ISO 13320	0.02 µm to 3 500 µm	
		Light Diffraction Measurement of Particle Size	USP <429>		
		Determination of Particle Size Distributions - Electrical Sensing Zone Method	ISO 13319	1 µm to 260 µm	
		Particle size Analysis - Dynamic Light Scattering (DLS)	ISO 22412	10 nm to 1 µm	
		Standard Guide for Particle Size Distribution of Nanomaterials in Suspension by Photon Correlation Spectroscopy (PCS)	ASTM E2490-09(2015)		
		Standard Guide for Particle Size Distribution of Nanomaterial in Suspension by Nanoparticle Tracking Analysis (NTA)	ASTM E2834-12		
		Particle Size Distribution Estimation by Analytical Sieving	USP <786>	45 µm to 35 000 µm (Mesh 325 to 1.25 in)	
	Specific Surface Area	Determination of the Specific Surface Area of Solids by Gas Adsorption (BET Method)	ISO 9277	0.1 m ² /g to 400 m ² /g	
		Specific Surface Area	USP <846>		
	Pore Size Distribution & Porosity	Pore Size Distribution & Porosity of Solid Materials by Mercury Porosimetry and Gas Adsorption	Porosity by Mercury Intrusion	ISO 15901-1	3 nm to 250 µm
				ISO 15901-2	1.7 nm to 300 nm
				ISO 15901-3	5 Å to 3 000 Å
				USP <267>	3 nm to 250 µm
Particle Size and Shape	Image Particle Size Analysis - Image Analysis Methods: Static	ISO 13322-1	1 µm to 1 000 µm		



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Mechanical ^F	Density	Standard Test Method for Metal Powder Skeletal Density by Helium or Nitrogen Pycnometry	ASTM B923	N/A	
		Determination of density by volumetric displacement - Skeleton density by gas pycnometry	ISO 12154		
		Bulk Density & Tapped Density of Powders	USP <616>		
		Density of Solids	USP <699>		
	Thermal Analysis	Plastics		ISO 11357-1	-150 °C to 600 °C
				ISO 11357-2	
				ISO 11357-3	
				ISO 11357-7	
			ISO 11358-1	Ambient to 1 000 °C	
		Standard Test Methods for Loss on Drying by Thermogravimetry	ASTM E1868	N/A	

1. The presence of a superscript F means that the laboratory performs testing of the indicated parameter at its fixed location. Example: Outside Micrometer ^F would mean that the laboratory performs this testing at its fixed location.