



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

Initial Accreditation Date:

July 04, 2018

Issue Date:

April 14, 2023

Expiration Date:

April 14, 2025

Accreditation No.:

98927

Certificate No.:

L23-303

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

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 Customer Specified Methods	0.02 µm to 3 500 µm
		Light Diffraction Measurement of Particle Size	USP <429> Customer Specified Methods	
		Determination of Particle Size Distributions - Electrical Sensing Zone Method	ISO 13319 Customer Specified Methods	1 µm to 260 µm
		Particle size Analysis - Dynamic Light Scattering (DLS)	ISO 22412 Customer Specified Methods	10 nm to 1 µm
		Standard Guide for Particle Size Distribution of Nanomaterials in Suspension by Photon Correlation Spectroscopy (PCS)	ASTM E2490 Customer Specified Methods	
		Standard Guide for Particle Size Distribution of Nanomaterial in Suspension by Nanoparticle Tracking Analysis (NTA)	ASTM E2834 Customer Specified Methods	
		Particle Size Distribution Estimation by Analytical Sieving	USP <786> Customer Specified Methods	45 µm to 35 000 µm (Mesh 325 to 1.25 in)
		Determination of particle size distribution - Single particle light interaction methods - Part 2: Light scattering liquid-borne particle counter	ISO 21501-2 Customer Specified Methods	0.5 µm to 400 µm
		Determination of particle size distribution - Single Particle light interaction methods - Part 3: Light extinction liquid-borne particle counter	ISO 21501-3 Customer Specified Methods	
		Subvisible Particulate Matter in Therapeutic Protein Injections	USP <787> Customer Specified Methods	
		Particulate Matter in Injections	USP <788> Customer Specified Methods	
		Particulate Matter in Ophthalmic Solutions	USP <789> Customer Specified Methods	N/A
		Cleanliness of Components & Systems	ISO 16232, Customer specified methods	



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Mechanical ^F	Specific Surface Area	Determination of the Specific Surface Area of Solids by Gas Adsorption (BET Method)	ISO 9277 Customer Specified Methods	0.1 m ² /g to 400 m ² /g
		Specific Surface Area	USP <846> Customer Specified Methods	
	Pore Size Distribution & Porosity	Pore Size Distribution & Porosity of Solid Materials by Mercury Porosimetry and Gas Adsorption	ISO 15901-1 Customer Specified Methods	3 nm to 250 μm
			ISO 15901-2 Customer Specified Methods	1.7 nm to 300 nm
			ISO 15901-3 Customer Specified Methods	5 Å to 3 000 Å
		Porosity by Mercury Intrusion	USP <267>	3 nm to 250 μm
	Pore Size Distribution & Porosity	Standard Test Method for Pore Size Characteristics of Geotextiles by Capillary Flow Test	ASTM D6767, Customer Specified Methods	0.013 μm to 500 μm
	Pore Size Distribution & Porosity	Standard Guide for Determining the Mean Darcy Permeability Coefficient for a Porous Tissue Scaffold	ASTM F2952, Customer Specified Methods	0.013 μm to 500 μm
	Particle Size and Shape	Image Particle Size Analysis - Image Analysis Methods: Static	ISO 13322-1 Customer Specified Methods	1 μm to 1 000 μm
	Density		Standard Test Method for Metal Powder Skeletal Density by Helium or Nitrogen Pycnometry	ASTM B923 Customer Specified Methods
Determination of density by volumetric displacement - Skeleton density by gas pycnometry			ISO 12154 Customer Specified Methods	
Standard Test Method for Apparent Density of Metal Powders and Compounds Using the Scott Volumeter			ASTM B329 Customer Specified Methods	
Standard Test Method for Tap Density of Metal Powders and Compounds			ASTM B527 Customer Specified Methods	
Standard Test Method for True Specific Gravity of Refractory Materials by Gas Comparison Pycnometer			ASTM C604 Customer Specified Methods	



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Mechanical ^F	Density	Standard Test Method for Density of Coating Powders	ASTM D5965 Customer Specified Methods	N/A	
		Standard Test Methods for Determining Loose & Tapped Bulk Densities of Powders Using a Graduated Cylinder	ASTM D7481 Customer Specified Methods		
		Bulk Density & Tapped Density of Powders	USP <616> Customer Specified Methods		
		Density of Solids	USP <699> Customer Specified Methods		
	Thermal Analysis	Plastics		ISO 11357-1 Customer Specified Methods	-150 °C to 600 °C
				ISO 11357-2 Customer Specified Methods	
				ISO 11357-3 Customer Specified Methods	
				ISO 11357-7 Customer Specified Methods	
				ISO 11358-1 Customer Specified Methods	
		Standard Test Methods for Loss on Drying by Thermogravimetry	ASTM E1868 Customer Specified Methods	N/A	
Total Solids	Determination of total solids content	ISO 124 ASTM D5907, Customer specified methods	N/A		

- 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.