

Particle Testing Authority - Price List

PARTICLE SIZE AND PARTICLE SHAPE

Laser Light Scattering-Mie and Fraunhofer Theories

PSA-01 (Formerly 520-00)	Aqueous-dispersion (ISO 13320) using Saturn DigiSizer	220 €
PSA-02 (Formerly 520-01)	Non-aqueous-based dispersion (ISO 13320) using Saturn DigiSizer	220 €
PSA-03 (Formerly 520-50)	Dry dispersion (ISO 13320) using Malvern Mastersizer	220 €
PSA-04 (Formerly 520-51)	Liquid dispersion (ISO 13320) using Malvern Mastersizer	220 €

X-Ray Sedimentation-Stokes' Law

PSA-05 (Formerly 510-00)	Aqueous and non-aqueous based dispersion inorganic materials only (ISO 13317-3) (Requires skeletal density (Density-01) prior to analysis if skeletal density is not provided)	228 €
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Electrical Sensing Zone-“Coulter principle”

PSA-06 (Formerly 538-00)	Aqueous and non-aqueous based dispersion (ISO 13319)	260 €
PSA-07 (Formerly 538-02)	Particle Size Distribution plus particle concentration analysis (ISO 13319)	280 €

Particle Shape Analysis

PSA-13 (Formerly 005-80)	Particle shape using Wet dispersion and Dynamic Image Analysis (ISO 13322-2)	240 €
SEM-04 (Formerly 005-81)	Particle shape using an Automated Microscopy technique	Call

Nano Particle Size

Physi-23 (Formerly 005-70)	Average particle size calculated from BET surface area	228 €
PSA-10 (Formerly 005-71)	Dynamic Light Scattering / Photon correlation spectroscopy (ISO 22412)	220 €

Other Particle Size Techniques

PSA-11 (Formerly 005-73)	Particulate count and concentration using the Light Obscuration technique (USP method <788> and <789>)	252 €
PSA-12 (Formerly 005-74)	Sub-sieve AutoSizer (ASTM B330-07, ASTM C721, ISO-10070) (Requires density prior to analysis) Air permeability Diameter.	220 €
PSA-14 (Formerly 010-16)	Dry or Wet sieving available / Ro-Tap apparatus	180 €
PSA-15 (Formerly 010-78)	Particle size of material on filters	272 €
SEM-03 (Formerly 010-50)	Particle size using automated microscopy techniques	Call

Zeta Potential

PSA-16 (Formerly 120-00)	Zeta potential (ISO 13099-2)	252 €
PSA-17 (Formerly 120-01)	ISO-electric point determination and pH titration	520 €

Mayer-Stowe

PSA-18 (Formerly 942-09)	Particle size calculation from Mercury Intrusion Analysis	280 €
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B.E.T. OR LANGMUIR SURFACE AREA; T-PLOT AREA

Physi-01 (Formerly 005-01)	Multipoint surface area using Nitrogen gas (ISO 9277)	184 €
Physi-02 (Formerly 005-02)	Multipoint surface area using Krypton gas (ISO 9277)	212 €
Physi-04 (Formerly 005-10)	Multipoint surface area and STSA using Nitrogen gas (ASTM D6556)	252 €

PORE VOLUME DISTRIBUTION/PORE SIZE DISTRIBUTION

Pore Size by Gas Adsorption:

Pore size samples may include the following reports as appropriate: BET or Langmuir surface area, BJH mesopore analysis, DFT pore size calculations, single-point total pore volume, and t-Plot micropore volume (ISO 15901-02).

Physi-10 (Formerly 005-50)	40-point nitrogen adsorption isotherm (20 Å to 3000 Å)	300 €
Physi-12 (Formerly 005-08)	40-pt Nitrogen adsorption and 40-pt desorption isotherm (20 Å to 3000 Å)	440 €

Micropore Pore Size Distribution:

Reports may include H-K, Dubinin, and/or DFT methods for micropore analysis (ISO 15901-3).

Physi-13 (Formerly 201-03)	High-resolution micropore analysis plus mesopore isotherm (4 Å to 3000 Å)	760 €
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Pore Size by Mercury Intrusion

Report will include calculations of bulk density, skeletal density, porosity, average pore diameters, median pore diameters, and total intrusion volume. Additional summary reports such as tortuosity, fractal dimension, permeability, and compressibility are available upon request for an additional fee (ISO 15901-01).

MIP-01 (Formerly 942-03)	Mercury intrusion analysis (pore size range 360 to 0.003 µm)	280 €
MIP-02 (Formerly 942-04)	Mercury intrusion and extrusion analysis (pore size range 360 to 0.003 µm)	320 €
MIP-03 (Formerly 942-10)	High-resolution macropore analysis (pore size range 900 to 4 µm)	260 €
MIP-04 (Formerly 942-11)	High-resolution macropore plus a complete intrusion and extrusion analysis	400 €
MIP-05	Reverberi method for pore throat and pore cavity	480 €
MIP-10 (Formerly 942-05)	Advanced Hg calculations	60 €

DENSITY

Density-01 (Formerly 133-00)	Skeletal density (Helium or Nitrogen pycnometry) ISO 12154, USP <699>	100 €
Density-02 (Formerly 133-01)	Skeletal density at specific temperature	120 €
Density-03 (Formerly 133-02)	Open cell content of rigid cellular plastic, foam density (ASTM D6226)	160 €
Density-04 (Formerly 136-00)	Envelope density of solid, non-powder samples using the GeoPyc® 1360	120 €
Density-05 (Formerly 136-01)	T.A.P. TM (Transverse Axial Pressure) density using the GeoPyc® 1360	160 €
Density-07 (Formerly 942-07)	Mercury bulk density	160 €
Density-08 (Formerly 010-70)	Bulk and Tap Density USP <616>	140 €
Density-09 (Formerly 010-77)	Bulk density only	100 €

SPECIAL VAPOR SORPTION SERVICES

Physi-20 (Formerly 005-60)	Special CO ₂ isotherms at 0 °C	460 €
Physi-21 (Formerly 005-60)	Adsorption isotherms at user defined conditions (specialty gases)	720 €
Physi-22 (Formerly 005-61)	High-Pressure isotherms using Hydrogen, Nitrogen, Oxygen, & Methane other gases	760 €
Vapor-01 (Formerly 005-63)	Vapor isotherms-Dynamic Vapor Sorption (DVS) gravimetric analysis	640 €
Vapor-02 (Formerly 005-64)	Vapor isotherms using Volumetric technique (ASAP 2020 or 3Flex)	640 €
Vapor-03 (Formerly 005-65)	Inverse Gas Chromatography (Surface Energy Measurement)	720 €
Vapor-04 (Formerly 005-75)	Surface Energy heterogeneity profile (Requires BET 005-01)	1020 €

CHEMISORPTION

Chemi-01 (Formerly 201-10)	Volumetric Chemisorption analysis (specify analytical method)	600 €
Chemi-02 (Formerly 291-23)	Dynamic or pulse Chemisorption analysis (specify analytical method)	600 €
Chemi-03 (Formerly 291-03)	Pulse Chemisorption using liquid vapors (specify analytical method)	680 €

Temperature-Programmed Studies

Chemi-04 (Formerly 291-01)	Temperature-Programmed Reduction (TPR)	520 €
Chemi-05 (Formerly 291-10)	Temperature-Programmed Desorption (TPD)	520 €
Chemi-06 (Formerly 291-02)	Temperature-Programmed Oxidation (TPO)	520 €
Chemi-07 (Formerly 291-06)	Mass Spectrometry analysis (must be combined with temperature program study or TGA)	220 €

Other Chemisorption Experiments

Chemi-20 (Formerly 005-62)	High-Pressure Reactions using AutoChem 2950 (max. 60 bar)	Call
Chemi-21 (Formerly 201-50)	Isosteric Heat of Adsorption	1000 €
Chemi-22 (Formerly 291-20)	Heat of Desorption, first order Kinetics	1440 €

MICROSCOPY

SEM-01 (Formerly 010-40)	SEM imaging	220 €
SEM-02 (Formerly 010-41)	Elemental Analysis by Energy Dispersion Spectroscopy and SEM Imaging	300 €
SEM-05 (Formerly 010-23)	Images from optical microscope	Call

THERMAL ANALYSIS

Thermal -01 (Formerly 005-66)	TGA-Standard Run Conditions Room Temp-900°C	296 €
Thermal -02 (Formerly 005-67)	DSC-Standard Run Room Temp-600°C	316 €
Thermal -03 (Formerly 005-68)	mDSC-Modulated DSC-High Resolution	420 €
Thermal -04 (Formerly 005-69)	Combination TGA/DSC	552 €

POWDER RHEOLOGY

Powder - 01	Complete set of Powder testing using the FT4, including Dynamic Flow Properties, Bulk Powder properties and Shear Properties. A summary report will be provided.	920 €
Powder - 02	Dynamic Flow Properties includes basic Flowability, aeration testing and consolidation testing along with a summary report.	460 €
Powder - 03	Bulk Powder Property testing includes compressibility and permeability testing along with a summary report	380 €
Powder - 04	Shear property testing includes Shear Cell testing and Wall Friction testing along with a summary report.	380 €
Powder - 05	Individual powder property testing, choose from Flowability, aeration, consolidation, compressibility, permeability, Shear and wall friction testing. Price is per test and per sample. No summary report available.	180 €

CAPILLARY FLOW POROMETRY

Filter-01	Scanning porometry of pore sizes down to 30 nm using a POROLUX TM 100/100NW; 500	135 €
Filter-02	Step equilibration porometry of pore sizes down to 30 nm using a POROLUX TM 1000	250 €
Filter-03	Liquid-liquid porometry of pores down to 5 nm using a POROLIQT TM 100 AQ or ML	490 €
Filter-04	Water permeability at pressures up to 6 bar using a POROLUX TM 1000; sample preparation included	240 €
Filter-05	Gas permeability at pressures up to 6 bar using a POROLUX TM 100/500; sample preparation included	100 €
Filter-06	First Bubble Point determination using a POROLUX TM 1000; sample preparation included	130 €

SCIENTIFIC SERVICES

PTA-01 (Formerly 010-00)	Non-Standard Laboratory Analysis	Call
PTA-02 (Formerly 010-10)	Method Development services	Call
PTA-03 (Formerly 010-11)	Method Validation Services	Call
PTA-04	Method Verification or Method Transfer	Call
PTA-05 (Formerly 010-06)	Consulting services and detailed results interpretation	Call

OTHER SERVICES

PTA-06 (Formerly 010-80)	Special sample Preparation or storage (glove box or freezer)	60 €
PTA-10 (Formerly 005-87)	Expert Testimony	Call
PTA-13 (Formerly 010-01)	Certificate of Analysis	60 €
PTA-40 (Formerly 005-85)	Dynamic Void Volume-DVVA (ASTM D7854)	280 €
PTA-41 (Formerly 005-86)	Magnetic content using Buck analyzer	120 €
PTA-42 (Formerly 010-15)	Viscosity of Newtonian liquids using cone/plate rheometer	88 €
PTA-50 (Formerly 010-76)	Material Characterization using XRD (X-Ray Diffraction)	Call
SEM-03 (Formerly 010-50)	Contamination or Particle Identification (outsourced)	Call
MIP-11 (Formerly 950-50)	Volume calibration of AutoPore mercury penetrometers	212 €

VOLUME DISCOUNT SCHEDULE

Volume discounts are based on the number of samples sent in for same test number, not just total number of samples.

1-5 samples.....	List Price
6-10 samples.....	5% discount
11-20 samples.....	10% discount
21-40 samples	15% discount
More than 40 samples.....	20% discount

SAMPLE TURNAROUND TIMES

Turnaround times are typical for most samples. Some exclusions do apply.

Normal (Typically less than 7 business days)	List Price
Priority (Typically 2 to 4 business days)	List Price + 50% surcharge
Rush (Next sample analyzed)	List Price + 200% surcharge

All orders are subject to Particle Testing Authority terms and conditions (see separate terms and conditions document at www.particletesting.com). Credit card orders are welcomed. Unless otherwise requested, samples will be retained for a minimum of 3 months. Samples can be returned at the customer's expense, provided correct shipping and payment information is received. Sample results will be maintained for a minimum of 5 years. All samples and related customer information is kept confidential.

INSTRUMENT PURCHASE ALLOWANCE

Half the cost of applicable analyses completed within 120 days of instrument purchase may be credited toward instrument purchase. The maximum credit allowed is 4% of the instrument purchase price. Customer must notify Micromeritics of credit due when instrument is ordered.

RETURN SAMPLE FEE

There is a flat fee of 50€ per project for all sample returns, 160€ if samples are considered hazardous, unless an account number is provided. SDS are required for all samples.

Please review the Terms and Conditions by visiting: <http://particletesting.com/submit-a-sample>

TERMS: Net 30 days; for 45 days add 2%, for 60 days add 4% to the final negotiated price.