

## Particle Size and Particle Shape

### Laser Light Scattering - Mie and Fraunhofer Theories

<b>520 - 00</b> Aqueous-based dispersion.....	<b>\$250</b>
<b>520 - 01</b> non-aqueous - based dispersion.....	<b>\$250</b>
<b>520 - 50</b> Dry dispersion Malvern Mastersizer.....	<b>\$250</b>
<b>520 - 51</b> Liquid Dispersion Malvern Mastersizer.....	<b>\$250</b>

### Electrical Sensing Zone - “Coulter principle”

<b>538 - 00</b> Aqueous and non-aqueous based dispersion.....	<b>\$300</b>
<b>538 - 02</b> Particle Size Distribution plus particle concentration analysis.....	<b>\$325</b>

### Particle Shape Analysis

<b>005 - 80</b> Particle shape using Wet dispersion and Dynamic Image Analysis.....	<b>\$275</b>
<b>005 - 81</b> Particle shape using an Automated Microscopy technique.....	<b>\$750</b>

### Nano Particle Size

<b>005 - 70</b> Average particle size calculated from BET surface area.....	<b>\$250</b>
<b>005 - 71</b> Dynamic Light Scattering / Photon correlation spectroscopy.....	<b>\$250</b>

### Sieve Analysis

<b>010 - 16</b> Dry or West sieving available / Ro-Tap apparatus.....	<b>\$175</b>
<b>010 - 71</b> Alpine Airjet Sieves.....	<b>\$175</b>
<b>010 - 72</b> Sonic sifter for small volumes.....	<b>\$175</b>

### Other Particle Size Techniques

<b>005 - 73</b> Particulate count and concentration using the Light Obscuration technique (USP method <788> and USP <789>).....	<b>\$300</b>
<b>005 - 74</b> HEL Sub-sieve auto-sizer ISO - 10070 Air permeability Diameter.....	<b>\$250</b>

### Zeta Potential

<b>120 - 00</b> Zeta potential.....	<b>\$300</b>
<b>120 - 01</b> ISO-electric point determination and pH titration.....	<b>\$650</b>

### Microscopy

<b>010 - 50</b> Particle size using automated SEM techniques.....	<b>\$575 + up</b>
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## B.E.T. or Langmuir Surface Area

<b>005 - 01</b> Multipoint surface area using Nitrogen gas <USP 846>.....	<b>\$200</b>
<b>005 - 02</b> Multipoint surface area using Krypton gas.....	<b>\$225</b>

## 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.

<b>005 - 50</b> 40-point Nitrogen adsorption isotherm (20 Å to 3000 Å).....	<b>\$350</b>
<b>005 - 05</b> Surface area and 40-point Nitrogen desorption isotherm (20 Å to 3000 Å).....	<b>\$375</b>
<b>005 - 08</b> 40-point Nitrogen adsorption and 40-point desorption isotherm (20 Å to 3000 Å).....	<b>\$540</b>

### Micropore Pore Size Distribution

Reports may include H-K, Dubinin, and/or DFT methods for micropore analysis.

<b>201 - 03</b> High-resolution micropore analysis plus mesopore isotherm (4 Å to 3000 Å).....	<b>\$900</b>
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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.

<b>942 - 03</b> Mercury intrusion analysis (pore size range 360 to 0.003 μm).....	<b>\$325</b>
<b>942 - 04</b> Mercury intrusion and extrusion analysis (pore size range 360 to 0.003 μm).....	<b>\$375</b>
<b>942 - 10</b> High-resolution macropore analysis (pore size range 900 to 4 μm).....	<b>\$300</b>
<b>942 - 11</b> High-resolution macropore plus a complete intrusion and extrusion analysis.....	<b>\$475</b>

## Density

<b>133 - 00</b> Skeletal density (Helium or Nitrogen pycnometry) <USP 699>.....	<b>\$100</b>
<b>942 - 07</b> Mercury bulk density.....	<b>\$135</b>
<b>136 - 00</b> Envelope density of solid, non-powder samples using the GeoPyc® 1360.....	<b>\$135</b>
<b>136 - 01</b> T.A.P.™ (Transverse Axial Pressure) density using the GeoPyc® 1360.....	<b>\$200</b>
<b>136 - 02</b> Specific pore volume and percent porosity calculations (Includes true density analysis and envelope density analysis).....	<b>\$225</b>
<b>010 - 70</b> Bulk and Tap Density USP method <616> / (Carr index).....	<b>\$150</b>

## Microscopy

<b>010 - 23</b> Optical Microscope Photos (price per photo).....	<b>\$50</b>
<b>010 - 50</b> Microscopy Techniques courtesy of MVA Scientific Consultants.....	<b>Call</b>

## Vapor Sorption

<b>005 - 63</b> Water Vapor Isotherms - Dynamic Vapor Sorption (DVS).....	<b>\$750</b>
<b>005 - 64</b> Vapor Isotherms using volumetric adsorption technique.....	<b>\$750</b>

## Thermal Analysis

005 - 66 TGA - Thermal Gravimetric Analysis.....	\$350
005 - 67 DSC.....	\$375
005 - 68 mDSC - Modulated DSC Analysis.....	\$500
005 - 69 Combination TGA/DSC.....	\$650

## Chemisorption / Pharma Catalyst / Reactive Materials

201 - 10 Volumetric Chemisorption analysis (specify analytical method).....	\$700
291 - 23 Dynamic or pulse Chemisorption analysis (specify analytical method).....	\$700
291 - 03 Pulse Chemisorption using liquid vapors (specify analytical method).....	\$800

### Temperature-Programmed Studies

291 - 01 Temperature-Programmed Reduction (TPR).....	\$600
291 - 10 Temperature-Programmed Desorption (TPD).....	\$600
291 - 02 Temperature-Programmed Oxidation (TPO).....	\$600
291 - 06 Mass Spectrometry analysis of effluent gas from chemisorption experiment.....	\$200

## Special Vapor Sorption Services/ Surface Energy

005 - 65 Inverse Gas Chromatography (IGC) Surface Energy Measurement.....	\$900
005 - 75 Surface energy heterogeneity (Requires BET 005-01).....	\$1200

## Scientific Services

010 - 00 Non-Standard Laboratory Analysis.....	Call
010 - 10 Analytical Method Development or Method Validation service.....	Call
010 - 11 Method Validation Services.....	Call
010 - 06 Consulting services and detailed results interpretation.....	\$195/hr

## Other Services

010 - 15 Viscosity of Newtonian liquids using cone/plate rheometer.....	\$75
010 - 18 pH.....	\$55
010 - 19 Percent moisture (weight loss upon drying).....	\$75
010 - 22 Specific gravity of slurry.....	\$75
010 - 24 Total dissolved solids.....	\$75
010 - 25 Total suspended solids.....	\$75
010 - 26 Specific gravity at user specified temperatures.....	\$125
005 - 86 Magnetic Content using BUCK analyzer.....	\$150
005 - 87 Expert Testimony.....	Call
010 - 50 Contamination or Particle Identification (outsourced).....	Call
010 - 80 Special Sample Preparation or storage.....	\$50

# Additional Information

There is a 25% surcharge for all DEA-controlled substances and hazardous materials.  
There is a 10% surcharge for all GMP samples or projects.

## 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.....	5-7 days.....	List Price
Priority.....	2-4 days.....	List Price + 50% surcharge
Rush.....	Next sample analyzed.....	List Price + 200% surcharge

All orders are subject to Micromeritics Analytical Services terms and conditions (see separate terms and conditions document at [www.particletesting.com](http://www.particletesting.com)). Credit card orders are welcomed.

Unless otherwise requested, samples will be retained for 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 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, \$200 if samples are considered hazardous.

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Price effective October 1, 2013 and are subject to change without notice.

