Characterization methods for technical adsorbents

Norlab offers a whole range of testing instruments for technical adsorbents.

In order to evaluate materials suitability for technical adsorption, we offer systems for:

- Texture analysis (such as BET surface area and pore size distribution)
- Study of adsorption capacity measured under real or close to real conditions of analytical gases and mixtures as well as pressure and temperature

Technical adsorbents include activated carbons, zeolites, molecular sieves, silica gels and activated clay soils. For synthetic, highly porous materials, please see Characterization methods for MOFs and other synthetic, highly porous materials.

Technical adsorbents as a whole are used in industrial practices mostly in the form of granules, while their development in research usually results in powders.

Parameter	Method	Instrument
Active surface area	Chemisorption	AMI-300 series BenchCAT series µBenchCAT series
Adsorption, desorption and other reaction data	Temperature programmed reactions	AMI-300 series BenchCAT series µBenchCAT series
Adsorption of gas mixtures	Breakthrough curves	mixSorb L mixSorb S mixSorb SHP
BET surface area and pore analysis	Gas adsorption	3P micro series 3P meso series 3P sync series 3P surface DX
Density	Gas pycnometry	3P densi 100
Particle shape	Image analysis	BeVision D2 Bettersizer S3 Plus
Particle size, concentrated dispersions	Acoustic spectrometry	DT-1202 DT-100
Particle size, nanometer range	Dynamic light scattering	BeNano series
Particle size, powders	Laser diffraction	Bettersizer S3 Plus Bettersizer S3 Bettersizer 2600 Bettersizer ST
Pore volume and size distribution	Mercury intrusion porosimetry	Contract analysis Please ask for a quote
Tap density	Tapping volumetry	BeDensi T series

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Parameter	Method	Instrument
Water uptake and release	Dynamic vapor sorption (DVS)	3P graviSorb series
Wetted surface area of suspensions	Non-invasive NMR liquid relaxation technology	MagnoMeter XRS
Zeta potential, concentrated dispersions	Electroacoustic spectrometry	DT-1202 DT-310 DT-300