Characterization methods for abrasives

Norlab offers a whole range of testing instruments for grinding products.

The method of choice for the characterization of micronisation (such as grinding, breaking, etc.) and granulation processes is first and foremost laser diffraction. If one ventures into the sub-micrometer range during grinding processes in wet dispersions, acoustic spectrometry becomes a highly viable method, as it is working especially well in the nanometer region and at high concentration while not being subject to the limitations of laser diffraction with regards to particle size and concentration. In conjunction with electro acoustics, the online analysis of both particle size and zeta potential in micro-and nanometer ranges of concentrated dispersions becomes possible. This strategy is also possible for products which do not derive from a grinding method, such as oxides (e.g. alumina oxide, silica oxide) in the form of powders and granules as well as salts. BET-surface area, density and particle size analysis play an important role for these materials as well.



Parameter	Method	Instrument
BET surface area and pore analysis	Gas adsorption	3P micro series 3P meso series 3P sync series 3P surface DX
Density	Gas pycnometry	<u>3P densi 100</u>
Particle shape	Image analysis	BeVision D2 Bettersizer S3 Plus
Particle size, concentrated dispersions	Acoustic spectrometry	<u>DT-1202</u> <u>DT-100</u>
Particle size, nanometer range	Dynamic light scattering	BeNano series
Particle size, powders	Laser diffraction	<u>Bettersizer S3 Plus</u> <u>Bettersizer S3</u> <u>Bettersizer 2600</u> <u>Bettersizer ST</u>
Tap density	Tapping volumetry	<u>BeDensi T series</u>
Water uptake and release	Dynamic vapor sorption (DVS)	<u>3P graviSorb series</u>
Zeta potential	Electroacoustic spectrometry	<u>DT-1202</u> <u>DT-310</u> DT-300

