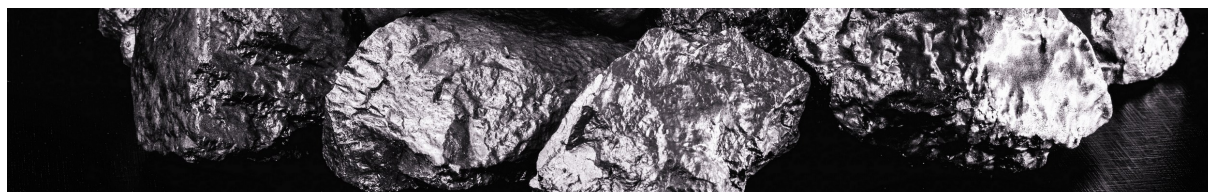


# Characterization methods for catalysts

Norlab offers a whole range of testing and analysis instruments for catalysts.

In the characterization of catalysts (heterogeneous catalysis) a differentiation should be made between the analysis of reactive sites, which are responsible for the catalytic effect, and the carrier material, the starting material and the intermediates. On the one hand, the classical BET surface area and pore analysis play a role as well as the application of specific temperature programmed reactions and the analysis of reaction products. However, one can also choose the separate analysis by physisorption (BET and pore analysis) and chemisorption. During the production process, particle analyses, density determinations and other analytical methods play also a role.



Parameter	Method	Instrument
Active surface area	<a href="#">Chemisorption</a>	<a href="#">AMI-300 series</a> <a href="#">BenchCAT series</a> <a href="#">μBenchCAT series</a>
Active surface area	<a href="#">Temperature programmed reactions</a>	<a href="#">AMI-300 series</a> <a href="#">BenchCAT series</a> <a href="#">μBenchCAT series</a>
Analysis of reaction products	<a href="#">Temperature programmed reactions</a>	<a href="#">AMI-300 series</a> <a href="#">BenchCAT series</a> <a href="#">μBenchCAT series</a>
BET surface area and pore analysis	<a href="#">Gas adsorption</a>	<a href="#">3P micro series</a> <a href="#">3P meso series</a> <a href="#">3P sync series</a> <a href="#">3P surface DX</a>
Density	<a href="#">Gas pycnometry</a>	<a href="#">3P densi 100</a>
Dispersion stability	<a href="#">Analysis of the transmission and backscattering behaviour</a>	<a href="#">MultiScan MS 20 dispersion stability analysis system</a>
Gas mixture adsorption	<a href="#">Breakthrough curves</a>	<a href="#">mixSorb L</a> <a href="#">mixSorb S</a> <a href="#">mixSorb SHP</a>
Particle dispersibility studies	<a href="#">Non-invasive NMR liquid relaxation technology</a>	<a href="#">MagnoMeter XRS</a>
Particle shape	<a href="#">Image analysis</a>	<a href="#">BeVision D2</a> <a href="#">Bettersizer S3 Plus</a>
Particle size, concentrated dispersions	<a href="#">Acoustic spectrometry</a>	<a href="#">DT-1202</a> <a href="#">DT-100</a>
Particle size, nanometer range	<a href="#">Dynamic light scattering</a>	<a href="#">BeNano series</a>
Particle size, powders	<a href="#">Laser diffraction</a>	<a href="#">Bettersizer S3 Plus</a> <a href="#">Bettersizer S3</a> <a href="#">Bettersizer 2600</a> <a href="#">Bettersizer ST</a>
Pore volume and size distribution	<a href="#">Mercury intrusion porosimetry</a>	Contract analysis <a href="#">Please ask for a quote</a>

Parameter	Method	Instrument
Solids concentration of suspensions	<a href="#">Non-invasive NMR liquid relaxation technology</a>	<a href="#">MagnoMeter XRS</a>
Strength of reactive centers	<a href="#">Temperature programmed reactions</a>	<a href="#">AMI-300 series</a> <a href="#">BenchCAT series</a> <a href="#">μBenchCAT series</a>
Wetted surface area of suspensions	<a href="#">Non-invasive NMR liquid relaxation technology</a>	<a href="#">MagnoMeter XRS</a>