

Particle characterization: quick, repeatable, statistically significant and with microscope quality images

The Morphologi[®] G3 automated particle characterization system from Malvern[®] Instruments is a new analytical tool that provides high quality, statistically significant particle size and shape information.



New fully automated sample dispersion device

A novel fully integrated dry powder dispersion system features precise software control of all dispersion parameters. It delivers highly reproducible dry powder dispersions, with consistent and controlled particle orientation, across a broad range of samples. The sample is completely enclosed and the system allows easy dispensing from bulk materials and the preparation of multiple aliquots.

Microscope quality images and statistically significant data

Rapid analysis of hundreds of thousands of particles with little or no user intervention

20 different morphological parameters for each

particle

For every particle measured, 20 different parameters describe size and shape.

A software tool compares and clusters data to determine differences and similarities between multiple measurements.

Visualisation

An interactive scattergram allows easy visualisation of measurement data. Classifications and filters can be applied in order to group or exclude certain values based on any size or shape parameter.

Regulatory compliance

Full automation of the Morphologi G3, using Standard Operating Procedures (SOP), eliminates any user bias inherent in manual microscopy methods. SOPs allow straightforward method development and easy electronic transfer. Automatic calibration, conformance to 21CFR part 11 requirements and the full IQ/OQ documentation ensure that the system is accurate and repeatable and all data are secure and validated.

Broad measuring range

For materials from 0.5µm to 3000µm

Wide range of sample types

Measurement of emulsions, suspensions and dry powders

Applications:

Pharmaceutical applications according to the "PAT initiative" and "Quality by Design" guideline

Detection of differences in the physical properties of excipients and active components which affect product performance measures including bioavailability, flowability, stability, blending and tableting efficiency.

Sensitivity to fines and foreign particle identification

Image analysis provides data on a 'number-basis'. The contribution each particle makes to the distribution is the same: a very small particle has exactly the same weighting as a very large particle.

Ensemble particle sizing methods usually provide data on a 'volume-basis', where the contribution

made by each particle is proportional to its volume:
large particles dominate the distribution and small
particles are effectively hidden because their
volume is so much less.

Image analysis is ideal for detecting the presence
of very small numbers of foreign particles.



www.chemie.de/products/e/71365/