



Particle characterization services:

Nanomol Technologies has a contract analysis unit which offers the following analytical services for the characterization of a wide variety of products according to the customer requirements – includes cGMP.

Particle Size Distribution (PSD) analysis by *Laser Diffraction*

PSD characterization with Malvern Mastersizer (2000 or 3000 model) equipment by wet or dry accessories – range 0.01 to 3500 μm – according to ISO 13320, USP <429> or Eur. Ph. guidelines.

- Analytical method development and optimization carried out by experts on the technique
- Analytical method validation and robustness evaluation cGMP. Routine measurements according to validated methods
- Transfer of analytical methods for PSD determination
- Routine measurements of any type of products

Particle Size and Z-Potential determination of nanoparticles by *Dynamic Light Scattering*

Particle size (nano scale) characterization according to ISO 22412_2017 guidelines and Z-Potential according to ISO 13099-1: 2012 guidelines with Malvern Zetasizer Nano ZS equipment – range 0.3 to 6000 nm.

Z-Potential determination during pH variation evolution studies (Titration).

Density determination by *He Pycnometry* and *Autotap*

True density measurement through Helium Pycnometer measuring the real volume of solid materials whether they are powders or porous solids. Based on gas displacement technique and Boyle's Law.

Compacted density measurement of powdery solids through Autotap equipment and according to ISO787 / 11, ASTM B527, ASTM D1464 and ASTM D4781 guidelines.

Morphology and particle size determination by *Automated Optical Microscopy*

Morphology and particle size characterization by image analysis with Automated Optical Microscopy equipment Malvern Morphologi G3S – range 0,5 μm to 3 millimetres – according to ISO 13322-1:2014 guidelines.

- Comparative studies to determine shape or size differences between particulate samples
- Correlation studies of physicochemical and pharmacological properties with morphological or particle size parameters
- Validation/Evaluation of PSD measurements obtained by Laser Diffraction

Stability determination of emulsions and suspensions (any concentration)

Stability characterization and monitoring of destabilization phenomena of suspensions (flotation, sedimentation, agglomeration, aggregation and coalescence) with Multiple Light Dispersion according to ISO TR 13097. Determination of stability kinetics, migration speeds and particle size in short periods of time.

Morphological characterization by *Scanning Electron Microscopy (SEM)* or *Transmission Electron Microscopy (TEM)*

Particle size and morphology characterization in nanoscopic and microscopic range. Qualitative analysis of samples with development of methods adapted to any type of sample.