



Technical Service for Morphological Analysis

MICRO- AND NANOSTRUCTURAL CHARACTERIZATION OF PLASTIC MATERIALS

KEY WORDS

MICROSCOPY,
CHARACTERIZATION,
PLASTICS

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DESCRIPTION

The morphological analysis technical service offers micro- and nanostructural characterization of plastic materials using optical microscopy, scanning electron microscopy (SEM), transmission electron microscopy (TEM), and 3D profilometry. The service includes sample preparation, high-resolution imaging, and the creation of technical reports with specialized morphological interpretation. This service allows for the detection of defects, interfaces, porosity, and processing or recycling effects, providing key information for material validation, process optimization, and the development of new solutions.

AVAILABLE TECHNIQUES AND/OR EQUIPMENT

- Optical Microscopy for general observation of surfaces and cross-sections
- Scanning Electron Microscopy (SEM) with EDS Spectroscopy for surface morphology and elemental mapping
- Transmission Electron Microscopy (TEM) for observation at the nanometer and atomic scale
- Atomic Force Microscopy (AFM) for topography, roughness and phase imaging of polymer surfaces
- 3D Optical Profilometry for quantification of surface texture and microrelief.

APPLICATIONS

- Micro- and nanostructural morphological analysis of plastic materials
- Service for the detection and diagnosis of defects, porosity, interfaces and degradation in polymer parts or formulations.
- Morphology-based evaluation of the effects of recycling, reformulation, or modification processes on the material.
- Morphological quality control of materials and parts in industrial, pilot or laboratory scale environments.