Fraunhofer UMSICHT

Understanding materials. Improving products. Plastics analysis.

Polymer insights for effective development decisions

Investigations using a scanning electron microscope

Complex issues require precise analysis that goes beyond routine procedures. We are your partner for accurate plastics analysis: from polymer synthesis and compounding to films and injection molding. We create transparency, reduce risks, and accelerate your development.

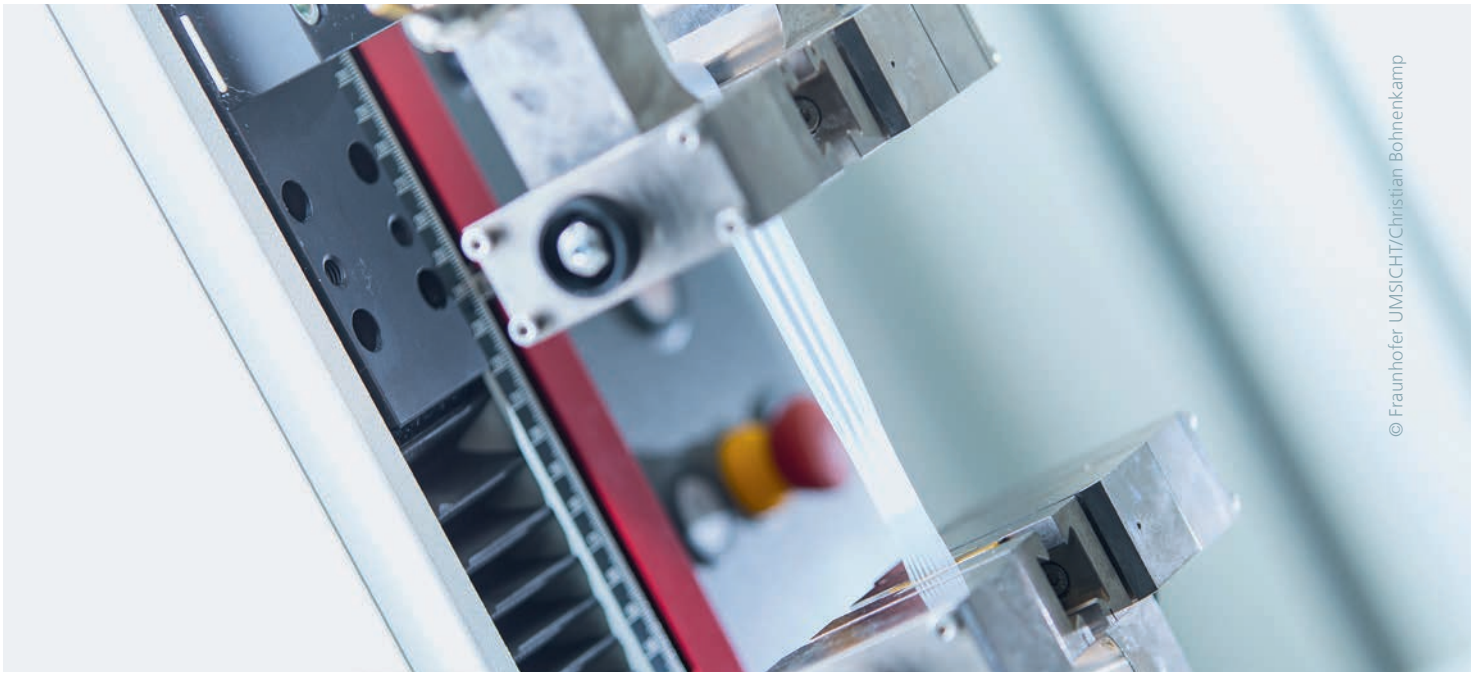
Clarity beyond routine

Our plastics analysis provides clarity when routine tests reach their limits. We provide selective, project-based support. We identify polymers, test mechanics, structure and morphology, perform elemental analyses and structural elucidation, correlate chemical signatures with mechanical performance and reveal the causes of deviations.

Whether your product fails to meet specifications, unknown components are present, aging is taking effect or processes are fluctuating, we provide reliable data and interpretations for effective development decisions. In the event of bottlenecks, we provide measurement capacity and seamlessly integrate results into your development process.

Industrial sectors

- Plastics processing industry
- Packaging industry
- Construction industry
- Gardening and landscaping
- Consumer goods industry
- Electrical and electronics industry



Tensile testing on films

Technological specifications

Our technological base covers mechanics, thermal analysis, microscopy, spectroscopy and rheology. An overview of the most important methods — flexibly combinable for your specific requirements. All methods are available on a project-specific basis.

- **Mechanical testing:** tensile/compression/bending, impact and notch impact; in-house test specimen production
- **Thermal analysis:** DSC, TGA, HDT/Vicat, DMTA
- **Microscopy:** REM, light microscopy, white light confocal microscopy
- **Rheology:** Rotational/oscillatory rheometer, MFI/MVR, high-pressure capilary rheometer, Rheotens
- **Other methods:** Particle size/distribution, density, water content, GPC, hardness (shore A/D)

Your service

Our service goes beyond pure data collection: Depending on the objective, we implement individual measurements or systematic series, define references, and develop customized measurement programs. We adapt analysis methods so that material-specific questions can be answered reliably; where standards do not apply, we design new test methods. We evaluate the results in an interdisciplinary manner and derive clear, actionable recommendations for development and process.

Your benefit

A broad spectrum of analytics meets application expertise: our technological know-how and flexible combination of mechanics, thermodynamics, chemistry and microstructure provide the depth your task requires. Our extensive portfolio enables rapid prioritization and reliable conclusions, even with complex samples. We interpret results in an industrial context and translate them into comprehensible, practical recommendations.

Here you will find an overview of our capabilities for plastic characterization:

Contact

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