Rheology and Physical Testing

Mission

The aim of the **Rheology and Physical Testing Laboratory** is to support requesters in studying and solving problems related to the flow and to the physical properties of materials.

In the rheology section of the laboratory we measure viscosity and viscoelastic properties of materials in a wide range of fluidity ("from water to polymer melts") over a wide range of shear. Also Dynamic Mechanical Analysis (DMA) can be performed, in dynamic torsion mode from -150°C to the softening of the material.

In the physical testing section, thermal and electrical behavior, color and transparency, granulometry, density are investigated.

Purpose includes quality control, base study of viscoelastic properties, physical characterization of materials, product development and the understanding of material performance, in particular to study and evaluate the processing conditions of the materials.

The customers of the Rheology and Physical Testing Laboratory are:
- R&I (Research and Innovation)
- CTD (Customer Technical Development)
- Production Plants

To guarantee the validity of the results, the laboratory participates in quarterly global cross-check with other Solvay labs on Melt Viscosity, Melt Flow Index and Differential Scanning Calorimetry.

Techniques

- **Rheology**
  - **Capillarity Rheometers - Melt Flow Testers - Rotational Rheometers**
- **Thermal Analysis**:
  - **TGA - DSC - TMA - Thermal Conductivity**
- **Electrical Analysis**:
  - **Resistivity - Permittivity and Loss Factory - BreakDown Voltage - CTI**
- **Optical Analysis:**
  - **Transmittance, Haze and Clarity - Color Gloss**
  - **Particle Size Determination (PSD) via Laser Diffraction (LD)**
  - **Density and Angle of Repose of Powders**
- **Fluids Testing:**
  - **Pour Point**

Team

	Name	Role	location
	ZANI, Claudia	Team Leader	B109-107
	SCHIATTARELLA, Imma	Researcher - Physical Tests Expert	B109-107
	BARONE, Fausto	Technician	B109-21

	GUERRA, Diego	Technician	B109-102
	PIERUCCI, Paola	Researcher	B109-102
	RESTELLI, Andrea	Technician	B109-05
	TIMPANO, Matteo	Technician	B109-102
	DI BRITA, Giovanni	ITS stage	B109-102

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back to home