The Polymer Market consists of a huge diversity of manufacturers of industrial products running many different processes yet still facing similar challenges. There is more and more pressure to achieve high product quality and reduce costs in order to stay one step ahead of the competition.

With our instruments and expertise, we can help you:

- Save money and ensure effective quality control
- Streamline your processes for outstanding operational efficiency
- Implement cost effective solutions by reverse engineering

Polymer Processes

<table>
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<tr>
<th>Optimization of materials to ensure robust downstream applications</th>
<th>Ensure resins meet agreed specifications.</th>
<th>QC of in-process and final products; determination of crystal orientation</th>
<th>ID of chemical composition and interactions of additives</th>
<th>Accelerated life testing and biodegradability studies</th>
<th>Study effects of chemical or environmental degradation</th>
<th>Optimization to improve flow, strength and stiffness</th>
<th>Poly-dispersion analysis</th>
</tr>
</thead>
</table>

- Classification of materials for recycling and disposal

Solutions for Polymers focused on providing more insight into product performance and process optimization

Material Science is becoming increasingly important, new technologies and applications make it easier to meet your daily challenges and regulations in a more cost efficient way. Our comprehensive portfolio of thermal analysis, molecular spectroscopy, chromatography and hyphenated techniques is the ideal choice for ensuring the quality and reliability of polymers.

**Glass transition & melting temperatures; crystallinity, heat of fusion, reaction rates, specific heat and heat capacity; curing, safety and stability studies**

- Differential Scanning Calorimetry
- Thermogravimetry
- STA 6000/8000
- TGA 8000
- TGA 4000
- STA 6000/8000
- TGA 8000
- TGA 4000

**Wt % Additive & In-product issues, Wt % Fillers & Ash, Decomposition, Pyrolysis, Decomposition and Stability studies**

- Molecular Spectroscopy FTIR & FT-NIR / Chemical Imaging
- Spectrum Two™
- Spectrum 3™
- FT-IR

**Identify and quantitate additives**

- GC/MS
- FT-NIR Gas Chromatography/Mass Spectrometry
- LC 300
- QLight 400 LC/MS/MS
- LC/MS/MS

**Module, stiffness, damping, crystalline, alpha and beta transitions, glass transition & melting temperatures**

- Mechanical Analysis
- TMA 4000
- TMA 8000
- TMA 8000

**Identify and quantitate evolved gases in resins and compounds**

- Liquid Chromatography/Mass Spectrometry
- LC 300
- QLight 400 LC/MS/MS

**Reflectance, transmission and absorption measurements for color, HAZE, building, window, coatings, glass and solar cells**

- Molecular Spectroscopy UV/Vis & UV/Vis/NIR
- Lambda 950 + 1050

**Multiple Techniques - Multiple Expertise from One Company**

- For performing QA/QC applications
- For studying processes in polymers
- For research & development