New tools in the characterization of complex Ethylene-Propylene copolymers

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The introduction of single-site catalysts and multiple reactor/zone production technologies in the polyolefins industry has allowed the design of new resins with complex microstructures but with optimized performance for specific applications.

The characterization of the new polymers is a challenging task and this becomes especially important in the case of high impact polypropylene (HIPP), as we have to analyze molar mass, ethylene content, tacticity, their distributions and the overall interdependence of these parameters.

Parallel to the development of the new production processes, new analytical tools have also been developed in the last years that provide a more comprehensive characterization of these resins by the use of hyphenated techniques, multiple detectors and new separation processes.

The analysis of HIPP and complex elastomer copolymers will be discussed using the most advanced separation technologies. The multidimensional analytical results being obtained by cross-fractionation methods (composition-molar mass) and multiple detectors will be presented with new powerful software tools.

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