

Advances in characterization of polyolefins by column-supported crystallization techniques

Laura Santonja-Blasco, Benjamin Monrabal

Polymer Char

Abstract

Techniques such as CRYSTAF, TREF, CEF, DC, or CRYSTEX separate polyolefin molecules in solution based on their crystallizability. In combination with an infrared detector, the valued chemical composition is obtained. All these techniques but CRYSTAF have in common that require columns with a support where the dissolved polymer is loaded, and where the crystals are formed before elution of the separated components.

Currently, due to the complexity of some polyolefins, which may also contain additives and traces of catalysts, the control of crystallization on the support is more demanding. On the other hand, we want the techniques to be as fast as possible without losing significant information, especially in quality control equipments. The investigation of supports for the crystallization of polyolefins in columns is a complex and broad topic. In this work we present the development of columns that provide minimum co-crystallization and long durability. These columns can be used successfully in CRYSTEX and CEF/TREF applications.