

THE JOURNEY OF A POLYMER PRODUCER TO SUPPORT CUSTOMERS E&L NEEDS

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In the view of SABIC's ambitions to grow in the Healthcare applications market, a clear understanding of customers' challenges and problems with respect to Extractables and Leachables is crucial. In addition to ensuring high quality products and compliance with standard regulations, material suppliers must also have a deep knowledge of their product chemistries for specific healthcare applications. Responding to our customers' needs when performing their own material toxicological assessment, SABIC has continued to develop and share deeper insights into E&L. A growing involvement of SABIC to develop a true E&L knowledge base, from Research to Marketing, has thus been taking place over the past few years. This presentation describes our journey - from the selection of the right solvents, appropriate analytical techniques and threshold of detection to selected and methodic studies of several key polyolefin grades. This work enables us (i) to understand the influence of solvents (polarity, pH) on the type and nature of Extractables, (ii) to identify some contaminants at very low levels of detection, (iii) to compare different production technologies and (iv) to study the relationship between the type of material (density, MWD) and the amount of Extractables. Additionally, the impact of sterilization onto Extractables will be shown for two specific resins: an LDPE and an HDPE.

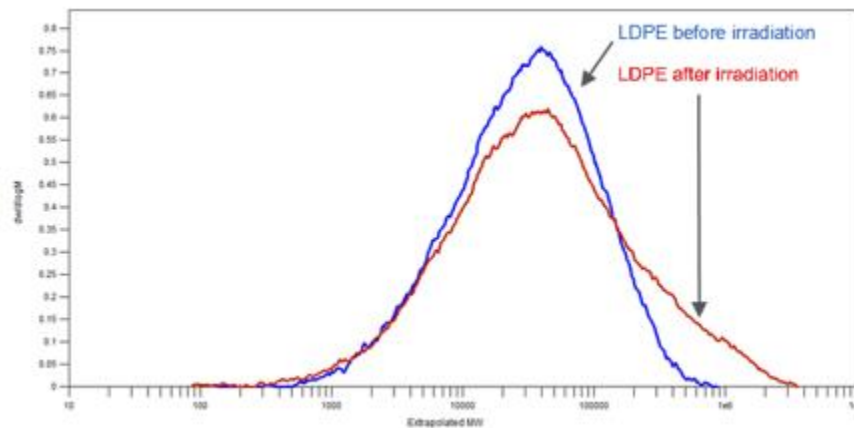


Figure 1 – Molecular Weight Distribution of LDPE before and after gamma-sterilization