

Flexible-density Polyethylene

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Abstract

Polyethylene is the largest volume commercial polymer used in the world. Univation Technologies, LLC (Houston, Texas, United States) is the leading global technology licensor, catalyst supplier, and technology solutions provider in the polyethylene industry. In recent years, Univation has made a number of innovations aimed at ameliorating grade change costs associated with its UNIPOL™ platform. These have reduced grade change costs to the point that it is now possible to produce in a single reactor line a slate of grades ranging from LLDPE to HDPE in an economically efficient manner. We have seen this capability described in the literature as “Flexible-density Polyethylene.”

This review examines the production of an eight-grade product slate in a single reaction train. The slate comprises LLDPE and HDPE grades with densities ranging from 0.918 to 0.963 g/cm³ and melt indices ranging from 1 to 100 dg/min.

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