PEP Report 18D

Polyethylene Terephthalate (PET)

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Abstract

Polyethylene terephthalate, commonly referred to as PET or simply polyester, is used to make products such as polyester fibers, PET packaging resins, and oriented PET (OPET) film. In 2016, world consumption of PET polymer was about 67.2 million tons. The polyester fiber segment accounted for about 65% of the global demand in 2016. The next largest end-use segment—packaging resin—makes up about 30% of total PET polymer consumption.

Since our last PEP Report on PET in 2006—PEP Report 18C, Polyethylene Terephthalate (September 2006)—continued process improvements have included larger-capacity PET plants, about 1 million tons per year. In 2006, a worldscale PET plant was about 450,000 tons per year. In addition, process improvement has resulted in substantial reduction of CAPEX and OPEX involved in production of PET solid-state resin.

In the current report, we discuss current production processes to produce PET resin grades for packaging or bottles. Features and differences among processes are summarized. The status of PET process licensors and what they offer are compared. A brief market overview summarizes the global supply and demand and end-use markets and demand drivers. The report presents the production economics for producing PET packaging resins by:

- INVISTA continuous polymerization PET process
- Polymetrix (Buhler) EcoSphere™ SSP process
- Uhde Inventa-Fischer Melt-to-Resin (MTR®) process
- Integrated INVISTA continuous polymerization PET—Polymetrix (Buhler) EcoSphere™ SSP process
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