ELEVAST™

General Compounding Guidelines For Elevast™-Enhanced Polymers

Elevast™ Polymer Modifiers can be readily compounded into a variety of polymers. These guidelines provide several recommendations for successfully incorporating Elevast™ into polymers using a twin-screw extruder.

Extruder

Any standard twin-screw extruder can be used to easily and efficiently incorporate Elevast™ into a polymer. Those with 30 - 60 length-to-diameter ratios (L/D) are preferable; 40 L/D is conventional.

Screw Design

The standard compounding screw typically used with polymers is often sufficient for incorporating useful levels of Elevast™. However, high concentrations of Elevast™ may require a screw design that utilizes liquid-mixing screw elements (gear-type elements) immediately downstream of the injection point. A modified screw design that causes unusual changes in polymer melt flow or color during the processing of the neat polymer may indicate that the design is too harsh.

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Fluid Injection

It is recommended that Elevast™ be injected into a barrel section at a point after the polymer achieves a molten state. If fillers are also being added, the injection point should be after the fillers have been introduced and are well dispersed. The injection point should be on top of conveying elements or liquid-mixing elements, preferably avoiding the high pressure generated by kneading elements. The injection pressure should be at least 40 bars (600 psi). A continuous-flow meter or loss-in-weight metering system is recommended.

Temperature

The melt temperature of the polymer should be sufficient to achieve a homogenized melt, but not so high that the polymer becomes degraded and discolored. Temperatures approximately 20°C to 40°C above the melting temperature of the highest-melting component are typical.

Pelletizing

Strand cutting or underwater pelletizing systems have both been used with good results.

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