



Crastin® PBT

thermoplastic polyester resin



Responsible Care®
A Public Commitment

Product Stewardship

Crastin® PBT thermoplastic polyester resins are polybutylene terephthalate resins modified to offer exceptional performance in a variety of demanding applications. Crastin® can be processed on conventional injection molding machines using standard industry practices. However, specific attention to processing details will enhance quality and productivity. For detailed molding information, refer to the Crastin® thermoplastic polyester resin molding guide. For additional information on safety, health, and environmental concerns, refer to the MSDS or call Dial DuPont First at (800) 441-0575. For automotive inquiries, call (800) 533-1313.

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| <p style="text-align: center;">Drying Considerations</p> <p>For both virgin resin and rework, hopper dryers sized to afford the following conditions are strongly recommended:</p> <ul style="list-style-type: none"> Moisture content must be below 0.04 wt%. Dry for 2–4 hr at 120°C (250°F). Dryer dewpoint must remain below –20°C (–4°F). Air flow minimum of at least 1 cfm/lb/hr. <p>Alternative Drying</p> <ul style="list-style-type: none"> Dry at least 8 hr at 82°C (180°F). <p>Note: Moisture content above 0.04 wt% will result in loss of strength and toughness.</p> | <p style="text-align: center;">Melt Temperatures</p> <p>Crastin® has good stability at the following processing temperatures:</p> <ul style="list-style-type: none"> 250°C (480°F) in parts using 30–70% of machine-rated capacity operating on cycles under 60 sec. 260°C (500°F) for parts that require 60–80% of machine capacity in cycles less than 45 sec. <p>Note:</p> <ul style="list-style-type: none"> Processing temperatures should be matched to part size. Excessive residence times and/or temperatures can cause degradation. Melt temperatures below 230°C (445°F) can lead to dangerous overpressure situations. | <p style="text-align: center;">Mold Temperatures</p> <p>Crastin® crystallizes rapidly and can be successfully molded over a broad range of mold temperatures:</p> <ul style="list-style-type: none"> 30–130°C (85–265°F). Unreinforced resins with mold temperatures under 65°C (150°F) will produce short cycle times. Reinforced resins with mold temperatures over 65°C (150°F) will produce better surface aesthetics, flow, and dimensional stability. <p>Note: In order to mold Crastin® into parts with optimum mechanical properties and post-molded dimensional stability, mold temperatures must be controlled to produce a sufficient degree of crystallization of the polymer.</p> |
| <p style="text-align: center;">Operating Conditions</p> <ul style="list-style-type: none"> Fast injection speeds (1–3 sec), especially in thin sections. Screw speeds should be adjusted to result in screw retraction times shorter than the cooling cycle. Back pressure (50 psi) will result in better quality melt and improved shot-to-shot uniformity. <p>Note:</p> <ul style="list-style-type: none"> Fast injection speed also improves knitline strength and surface appearance. High screw speeds should be avoided with glass-reinforced resins to avoid loss of mechanical properties due to glass fiber breakage. | <p style="text-align: center;">Shrinkage Considerations</p> <p>Shrinkage in semicrystalline resins such as Crastin® is from:</p> <ul style="list-style-type: none"> Crystallization of the polymer. Thermal contraction of the part as it cools to room temperature. <p>Causes of part distortion include:</p> <ul style="list-style-type: none"> A high level of glass fiber orientation. Poor mold temperature uniformity. Large changes in wall thickness of the part. <p>Note: High mold temperatures and thick part sections may increase shrinkage. Shrinkage in reinforced resins is controlled by glass fiber orientation, which results in different shrinkage rates parallel to and perpendicular to direction of flow.</p> | <p style="text-align: center;">Safety Considerations</p> <p>While processing Crastin®, all of the potential hazards associated with molding thermoplastic polyester resins must be anticipated and either eliminated or guarded against by following established industry procedures. Hazards include:</p> <ul style="list-style-type: none"> Thermal burns resulting from exposure to hot molten polymer. Fumes generated during drying, processing, and regrind operations. Formation of gaseous and liquid degradation products. <p>MSDSs include such information as hazardous components, health hazards, emergency and first aid procedures, disposal procedures, and storage information.</p> <p>Note: Adequate ventilation and proper protective equipment should be used during all aspects of the molding process. Refer to the DuPont Ventilation Guide for more detailed information.</p> |

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CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Medical Caution Statement," H-50102.

