



CELCON® LW90-F2

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Celcon® LW90-F2 is an acetal copolymer formulated with a nominal 9 melt flow rate base polymer and a standard level of polytetrafluoroethylene filler (PTFE). It is designed for use in wear applications against plastic, metal, glass, or ceramic mating surfaces where silicone lubricants can not be tolerated.

Product information

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Resin Identification Part Marking Code	POM+PTFE >POM+PTFE<		ISO 1043 ISO 11469
Rheological properties			
Melt volume-flow rate Temperature Load Moulding shrinkage, parallel	190 2.16 2.3	kg %	ISO 294-4, 2577
Moulding shrinkage, normal	1.9	%	ISO 294-4, 2577
Typical mechanical properties			
Tensile modulus Tensile stress at yield, 50mm/min Tensile strain at yield, 50mm/min Flexural modulus Flexural stress at 3.5% Compressive stress at 1% strain Charpy impact strength, 23°C Charpy impact strength, -30°C Charpy notched impact strength, 23°C Izod notched impact strength, 23°C Poisson's ratio [C]: Calculated	63 9 2600 72 27.6 120 120 5	MPa MPa % MPa MPa MPa kJ/m² kJ/m² kJ/m²	ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 ISO 178 ISO 178 ISO 604 ISO 179/1eU ISO 179/1eU ISO 179/1eA ISO 180/1A
Thermal properties			
Melting temperature, 10 ° C/min Temperature of deflection under load, 1.8 MPa Coefficient of linear thermal expansion (CLTE), parallel Coefficient of linear thermal expansion (CLTE), normal	100	°C °C E-6/K	ISO 11357-1/-3 ISO 75-1/-2 ISO 11359-1/-2 ISO 11359-1/-2
Physical/Other properties			
Density	1400	kg/m³	ISO 1183
Injection			
Drying Recommended Drying Temperature Drying Time, Dehumidified Dryer Processing Moisture Content Melt Temperature Optimum Min. melt temperature Max. melt temperature	no 100 3 - 4 ≤0.2 190 180 200	h % °C °C	

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Screw tangential speed≤0.3 m/sMold Temperature Optimum100 °CMin. mould temperature80 °CMax. mould temperature120 °CHold pressure range60 - 120 MPaBack pressure2 MPa

Characteristics

Processing Injection Moulding

Delivery form Pellets

Special characteristics Low wear / Low friction

Additional information

Injection molding

Preprocessing

Drying is generally not required because Celcon® and Hostaform® acetal copolymers are not hydroscopic nor are they degraded by moisture during processing. Excessive moisture can lead to splay (silver streaking) in molded parts. For better uniformity in molding especially when using regrind or material that has been stored in containers open to the atmosphere, recommended drying conditions are 80 C (180 F) for 3hours. Desiccant hopper dryers are not required. Maximum water content = 0.35%

Processing

Standard reciprocating screw injection molding machines with a high compression screw (minimum 3:1 and preferably 4:1) and low back pressure (0.35 Mpa/50 PSI) are favored. Using a low compression screw (I.E. general purpose 2:1 compression ratio) can result in unmelted particles and poor melt homogeneity. Using a high back pressure to make up for a low compression ratio may lead to excessive shear heating and deterioration of the material.

Melt Temperature: Preferred range 182-199 C (360-390 F). Melt temperature should never exceed 230 C (450 F).

Mold Surface Temperature: Preferred range 82-93 C (180-200 F) especially with wall thickness less than 1.5 mm (0.060 in.). May require mold temperature as high as 120 C (250 F) to reproduce mold surface or to assure minimal molded in stress. Wall thickness greater than 3mm (1/8 in.) may use a cooler (65 C/150 F) mold surface temperature and wall thickness over 6mm (1/4 in.) may use a cold mold surface down to 25 C (80 F). In general, mold surface temperatures lower than 82 C (180 F) may hinder weld line formation and produce a hazy surface or a surface with flow lines, pits and other included defects that can hinder part performance.

Postprocessing

Postprocessing conditioning and moisturizing are not required. It may be

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necessary to fixture large or complicated parts with varying wall thickness to prevent warpage while cooling to ambient temperature.

Processing Notes

Pre-Drying

Drying is not normally required. If material has come in contact with moisture through improper storage or handling or through regrind use, drying may be necessary to prevent splay and odor problems.

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