

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
^[C] Melt volume-flow rate, MVR	1.3	cm ³ /10min	ISO 1133
Temperature	190	°C	-
Load	2.16	kg	-
^[C] Molding shrinkage, parallel	2.3	%	ISO 294-4, 2577
^[C] Molding shrinkage, normal	1.9	%	ISO 294-4, 2577
^[C] Density of melt	1170	kg/m ³	-

[C]: CAMPUS

Mechanical properties	Value	Unit	Test Standard
ISO Data			
^[C] Tensile Modulus	2800	MPa	ISO 527
^[C] Yield stress	68	MPa	ISO 527
^[C] Yield strain	16	%	ISO 527
^[C] Charpy impact strength, +23°C	280	kJ/m ²	ISO 179/1eU
^[C] Charpy impact strength, -30°C	235	kJ/m ²	ISO 179/1eU
^[C] Charpy notched impact strength, +23°C	11	kJ/m ²	ISO 179/1eA
^[C] Charpy notched impact strength, -30°C	8.5	kJ/m ²	ISO 179/1eA

[C]: CAMPUS

Thermal properties	Value	Unit	Test Standard
ISO Data			
^[C] Melting temperature, 10°C/min	173	°C	ISO 11357-1/-3
^[C] Temp. of deflection under load, 1.80 MPa	101	°C	ISO 75-1/-2
^[C] Temp. of deflection under load, 0.45 MPa	158	°C	ISO 75-1/-2
^[C] Coeff. of linear therm. expansion, parallel	110	E-6/K	ISO 11359-1/-2
^[C] Coeff. of linear therm. expansion, normal	120	E-6/K	ISO 11359-1/-2

[C]: CAMPUS

Other properties	Value	Unit	Test Standard
^[C] Water absorption	0.75	%	Sim. to ISO 62
^[C] Humidity absorption	0.2	%	Sim. to ISO 62
^[C] Density	1410	kg/m ³	ISO 1183

[C]: CAMPUS

Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	80	°C	-
Pre-drying - Time	3	h	-
Processing humidity	≤0.35	%	-
Melt temperature	205 - 220	°C	-
Mold temperature	93 - 121	°C	-

Characteristics

Processing

Injection Molding, Film Extrusion, Profile Extrusion, Other Extrusion, Blow Molding, Calandring

Delivery form

Pellets

Features

Copolymer

Certifications

Drinking water contact

Regional Availability

North America, South and Central America

Other text information**Injection molding**

Drying is generally not required because Celcon® and Hostaform® acetal copolymer materials 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 three hours. Desiccant hopper dryers are not required. Max. water content = 0.35%. 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 with a 2:1 compression ratio) can result in unmelted particles and poor thermal homogeneity. Using a high back pressure to make up for a low compression ratio may lead to excessive shear heating and deterioration of the Celcon material.

Melt temperature: Preferred range 205-220 C (400-430 F) Melt temperature should never exceed 230 C (450 F).

Mold surface temperature: preferred range 93-121 C (200-250 F) especially with wall thickness less than 1.5 mm (0.060 in.). Wall thickness greater than 3 mm (1/8 in.) may use a cooler (82 C/180 F) mold surface temperature and wall thickness over 6 mm (1/4 in.) may use a cold mold surface temperature as low as 25 C (80 F). In general, mold surface temperatures lower than 82 C (180 F) may produce a hazy surface or a surface with flow lines, pits and other included defects.

Postprocessing conditioning and moisturizing not required. It may be necessary to fixture large or complicated parts with varying wall thickness to prevent warpage while cooling to ambient temperature.

Film extrusion

Drying is generally not required because Celcon materials are not hydroscopic nor are they degraded by moisture during processing. Excessive moisture can cause surface defects on the extruded film. For better uniformity especially when using regrind or material that has been stored in containers open to the atmosphere, recommended drying conditions are 3 Hrs. at 80 C (180 F). Desiccant hopper dryers are not required. Max. moisture content = 0.35%.

Standard extruders with a length to diameter ratio of at least 20:1 are recommended. The screw should be a high compression ratio of at least 3:1 and preferably 4:1 to assure good melting and melt homogeneity. The design should be approximately 35% each for feed and metering sections with the remaining 30% as the transition zone.

Melt temperature: 160-220 C (320-430 F)

Postprocessing conditioning or moisturizing is not required.

Profile extrusion

Drying is generally not required because Celcon materials are not hydroscopic nor are they degraded by moisture during processing. Excessive moisture can cause surface defects on the extrusion. For better uniformity especially when using regrind or material that has been stored in containers open to the atmosphere, recommended drying conditions are 3 Hrs. at 80 C (180 F). Desiccant hopper dryers are not required. Max. moisture content = 0.035%.

Standard extruders with a length to diameter ratio of at least 20:1 are recommended. The screw should be a high compression ratio of at least 3:1 and preferably 4:1 to assure good melting and melt homogeneity. The design should be approximately 35% each for feed and metering sections with the remaining 30% as the transition zone.

Melt temperature: 180-220 C (360-430 F).

Postprocessing or moisturizing is not required. For thick walled extrusions (>3 mm or 1/8 in.), annealing is recommended to reduce internal stresses.

Annealing temperature: 130-140 C (265-285 F)

Annealing time: 10 min/mm thickness

Blow molding

Consult product information services.

Consult product information services.

Consult product information services.

Calendering

Consult product information services.

Consult product information services.

Consult product information services.