

Celanese Celcon[®] M270[™]

Celcon[®] acetal copolymer grade M270[™] is a lower molecular weight, high - flow grade designed for superior moldability in multi-cavity, intricate or hard to fill molds applications.
Information provided by Celanese

Physical Properties	Metric	English	Comments
Specific Gravity	1.41 g/cc	1.41 g/cc	ASTM D792
Density	1.41 g/cc	0.0509 lb/in ³	ISO 1183
Density of Compound	1.20 g/cc	0.0434 lb/in ³	
Moisture Absorption	0.200 %	0.200 %	23°C/50%RH; ISO 62
Water Absorption at Saturation	0.75 %	0.75 %	ISO 62
Linear Mold Shrinkage, Flow	0.017 cm/cm	0.017 in/in	ISO 294-4
	0.022 cm/cm	0.022 in/in	ASTM D955
Linear Mold Shrinkage, Transverse	0.016 cm/cm	0.016 in/in	ISO 294-4
	0.018 cm/cm	0.018 in/in	ASTM D955
Melt Flow	23 g/10 min @Load 2.16 kg, Temperature 190 °C	23 g/10 min @Load 4.76 lb, Temperature 374 °F	[cm ³ /10min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	60.7 MPa	8800 psi	ASTM D638
	67.0 MPa	9720 psi	50mm/min; ISO 527-2/1A
Elongation at Yield	8.0 %	8.0 %	50mm/min; ISO 527-2/1A
Tensile Modulus	2.80 GPa	406 ksi	50mm/min; ISO 527-2/1A
Flexural Modulus	2.59 GPa	375 ksi	ASTM D790
	2.75 GPa	399 ksi	ISO 178
Izod Impact, Notched	0.534 J/cm	1.00 ft-lb/in	ASTM D256
Izod Impact, Notched (ISO)	5.40 kJ/m ²	2.57 ft-lb/in ²	ISO 180/1A
Charpy Impact Unnotched	11.6 J/cm ²	55.2 ft-lb/in ²	ISO 179/1eU
	10.8 J/cm ² @Temperature -30.0 °C	51.4 ft-lb/in ² @Temperature -22.0 °F	ISO 179/1eU
Charpy Impact, Notched	0.520 J/cm ²	2.47 ft-lb/in ²	ISO 179/1eA
Tensile Creep Modulus, 1 hour	2300 MPa	334000 psi	ISO 899-1
Tensile Creep Modulus, 1000 hours	1300 MPa	189000 psi	ISO 899-1

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	110 µm/m-°C	61.1 µin/in-°F	ISO 11359-2
CTE, linear, Transverse to Flow	120 µm/m-°C	66.7 µin/in-°F	ISO 11359-2
Specific Heat Capacity	2.21 J/g-°C	0.528 BTU/lb-°F	
Thermal Conductivity	0.155 W/m-K	1.08 BTU-in/hr-ft ² -°F	
Melting Point	166 °C	331 °F	10°C/min; ISO 11357-1,-2,-3
Deflection Temperature at 0.46 MPa (66 psi)	156 °C	313 °F	ISO 75-1, -2
Deflection Temperature at 1.8 MPa (264 psi)	103 °C	217 °F	ISO 75-1, -2
	110 °C	230 °F	ASTM D648

Processing Properties	Metric	English	Comments
Processing Temperature	80.0 - 120 °C	176 - 248 °F	cavity

	180 - 200 °C	356 - 392 °F	hot runner
Zone 1	170 - 180 °C	338 - 356 °F	
Zone 2	180 - 190 °C	356 - 374 °F	
Zone 3	180 - 190 °C	356 - 374 °F	
Zone 4	190 - 200 °C	374 - 392 °F	
Die Temperature	190 - 200 °C	374 - 392 °F	
Melt Temperature	180 - 200 °C	356 - 392 °F	
Ejection Temperature	140 °C	284 °F	
Drying Temperature	80.0 - 100 °C	176 - 212 °F	
Dry Time	3.00 hour	3.00 hour	
Injection Pressure	60.0 - 120 MPa	8700 - 17400 psi	
Hold Pressure	60.0 - 120 MPa	8700 - 17400 psi	
Back Pressure	<= 4.00 MPa	<= 580 psi	

Descriptive Properties

Injection molding	Yes	
Injection speed	slow-medium	
Pellets	Yes	
Processing conditions acc. ISO	9988-2	
Profile extrusion	No	