

# Celanese Celcon<sup>®</sup> M140

Celcon<sup>®</sup> acetal copolymer grade M140 is a moderately high flow general purpose injection molding grade. It is designed for use in applications requiring some enhanced flow characteristics over the standard Celcon<sup>®</sup> M90 material.

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 <sup>3</sup>	ISO 1183
Density of Compound	1.20 g/cc	0.0434 lb/in <sup>3</sup>	
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	0.018 cm/cm	0.018 in/in	ISO 294-4
	0.022 cm/cm	0.022 in/in	ASTM D955
Linear Mold Shrinkage, Transverse	0.017 cm/cm	0.017 in/in	ISO 294-4
	0.018 cm/cm	0.018 in/in	ASTM D955
Melt Flow	12 g/10 min @Load 2.16 kg, Temperature 190 °C	12 g/10 min @Load 4.76 lb, Temperature 374 °F	[cm <sup>3</sup> /10min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	60.7 MPa	8800 psi	ASTM D638
	65.0 MPa	9430 psi	50mm/min; ISO 527-2/1A
	34.5 MPa @Temperature 71.1 °C	5000 psi @Temperature 160 °F	ASTM D638
	94.5 MPa @Temperature -40.0 °C	13700 psi @Temperature -40.0 °F	ASTM D638
Elongation at Yield	9.0 %	9.0 %	50mm/min; ISO 527-2/1A
Tensile Modulus	2.74 GPa	397 ksi	50mm/min; ISO 527-2/1A
Flexural Modulus	2.59 GPa	375 ksi	ASTM D790
	2.64 GPa	383 ksi	ISO 178
	0.689 GPa @Temperature 104 °C	100 ksi @Temperature 220 °F	ASTM D790
	1.24 GPa @Temperature 71.1 °C	180 ksi @Temperature 160 °F	ASTM D790
Izod Impact, Notched	0.587 J/cm	1.10 ft-lb/in	ASTM D256
	0.481 J/cm @Temperature -40.0 °C	0.900 ft-lb/in @Temperature -40.0 °F	ASTM D256
Izod Impact, Notched (ISO)	5.70 kJ/m <sup>2</sup>	2.71 ft-lb/in <sup>2</sup>	ISO 180/1A
Charpy Impact, Notched	0.600 J/cm <sup>2</sup>	2.86 ft-lb/in <sup>2</sup>	ISO 179/1eA
Tensile Creep Modulus, 1 hour	2350 MPa	341000 psi	ISO 899-1
Tensile Creep Modulus, 1000 hours	1300 MPa	189000 psi	ISO 899-1

Thermal Properties	Metric	English	Comments
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CTE, linear, Parallel to Flow	100 µm/m-°C	55.6 µin/in-°F	ISO 11359-2
CTE, linear, Transverse to Flow	100 µm/m-°C	55.6 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 <sup>2</sup> -°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)	102 °C	216 °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	
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