

Celanese Celcon® M15HP

Celcon® acetal copolymer grade M15HP is a creep resistant, high viscosity polymer
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	1.165 g/cc	0.04209 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	0.023 cm/cm	0.023 in/in	ISO 294-4
Linear Mold Shrinkage, Transverse	0.019 cm/cm	0.019 in/in	ISO 294-4
Melt Flow	1.5 g/10 min	1.5 g/10 min	ASTM D1238
	1.3 g/10 min @Load 2.16 kg, Temperature 190 °C	1.3 g/10 min @Load 4.76 lb, Temperature 374 °F	[cm ³ /10min]; ISO 1133
Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	68.0 MPa	9860 psi	50mm/min; ISO 527-2/1A
Elongation at Yield	16 %	16 %	50mm/min; ISO 527-2/1A
Tensile Modulus	2.80 GPa	406 ksi	50mm/min; ISO 527-2/1A
Flexural Modulus	2.75 GPa	399 ksi	ISO 178
Izod Impact, Notched (ISO)	9.50 kJ/m ²	4.52 ft-lb/in ²	ISO 180/1A
Charpy Impact Unnotched	28.0 J/cm ²	133 ft-lb/in ²	ISO 179/1eU
	23.5 J/cm ² @Temperature -30.0 °C	112 ft-lb/in ² @Temperature -22.0 °F	ISO 179/1eU
Charpy Impact, Notched	1.10 J/cm ²	5.23 ft-lb/in ²	ISO 179/1eA
	0.850 J/cm ² @Temperature -30.0 °C	4.04 ft-lb/in ² @Temperature -22.0 °F	ISO 179/1eA
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
Melting Point	173 °C	343 °F	10°C/min; ISO 11357-1,-2,-3
Deflection Temperature at 0.46 MPa (66 psi)	158 °C	316 °F	ISO 75-1, -2
Deflection Temperature at 1.8 MPa (264 psi)	101 °C	214 °F	ISO 75-1, -2

Processing Properties	Metric	English	Comments
Processing Temperature	90.0 - 120 °C	194 - 248 °F	cavity
	190 - 220 °C	374 - 428 °F	hot runner
Zone 1	190 - 200 °C	374 - 392 °F	
Zone 2	190 - 210 °C	374 - 410 °F	
Zone 3	190 - 215 °C	374 - 419 °F	
Zone 4	190 - 220 °C	374 - 428 °F	
Die Temperature	190 - 220 °C	374 - 428 °F	
Melt Temperature	205 - 220 °C	401 - 428 °F	
Drying Temperature	80.0 - 100 °C	176 - 212 °F	
Dry Time	3.00 hour	3.00 hour	
Injection Pressure	90.0 - 140 MPa	13100 - 20300 psi	
Hold Pressure	90.0 - 140 MPa	13100 - 20300 psi	
Back Pressure	<= 4.00 MPa	<= 580 psi	