

Celcon® M270

Acetal (POM) Copolymer

Celanese Corporation

PROSPECTOR®

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Technical Data

Product Description

General purpose, high flow, fast cycling

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. Chemical abbreviation according to ISO 1043-1: POM Please also see Hostaform® C 27021.

General

Material Status	• Commercial: Active
UL Yellow Card ¹	• E38860-239310
Search for UL Yellow Card	• Celanese Corporation • Celcon®
Availability	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America
Additive	• Mold Release
Uses	• Automotive Applications
Forms	• Pellets
Processing Method	• Injection Molding
Multi-Point Data	• Isothermal Stress vs. Strain (ISO 11403-1) • Secant Modulus vs. Strain (ISO 11403-1) • Specific Volume vs Temperature (ISO 11403-2)

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.41 g/cm ³	1.41 g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR) (190°C/2.16 kg)	23 cm ³ /10min	23 cm ³ /10min	ISO 1133
Molding Shrinkage			ISO 294-4
Across Flow	1.6 %	1.6 %	
Flow	1.7 %	1.7 %	
Water Absorption			ISO 62
Saturation, 73°F (23°C)	0.75 %	0.75 %	
Equilibrium, 73°F (23°C), 50% RH	0.20 %	0.20 %	

Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus	406000 psi	2800 MPa	ISO 527-2/1A
Tensile Stress (Yield)	9720 psi	67.0 MPa	ISO 527-2/1A/50
Tensile Strain (Yield)	8.0 %	8.0 %	ISO 527-2/1A/50
Tensile Creep Modulus			ISO 899-1
1 hr	334000 psi	2300 MPa	
1000 hr	189000 psi	1300 MPa	
Flexural Modulus (73°F (23°C))	399000 psi	2750 MPa	ISO 178
Flexural Stress (3.5% Strain)	11000 psi	76.0 MPa	ISO 178
Compressive Stress			ISO 604
1% Strain	3770 psi	26.0 MPa	
6% Strain	13100 psi	90.0 MPa	

Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength (73°F (23°C))	2.5 ft·lb/in ²	5.2 kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F (-30°C)	51 ft·lb/in ²	110 kJ/m ²	
73°F (23°C)	55 ft·lb/in ²	120 kJ/m ²	
Notched Izod Impact Strength			ISO 180/1A
-22°F (-30°C)	2.4 ft·lb/in ²	5.0 kJ/m ²	
73°F (23°C)	2.6 ft·lb/in ²	5.4 kJ/m ²	



Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Heat Deflection Temperature			
66 psi (0.45 MPa), Unannealed	313 °F	156 °C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	217 °F	103 °C	ISO 75-2/A
Vicat Softening Temperature	322 °F	161 °C	ISO 306/B50
Melting Temperature ³	331 °F	166 °C	ISO 11357-3
CLTE			ISO 11359-2
Flow	6.1E-5 in/in/°F	1.1E-4 cm/cm/°C	
Transverse	6.7E-5 in/in/°F	1.2E-4 cm/cm/°C	

Fill Analysis	Nominal Value (English)	Nominal Value (SI)	Test Method
Melt Density	1.20 g/cm ³	1.20 g/cm ³	Internal Method
Melt Specific Heat	0.528 Btu/lb/°F	2210 J/kg/°C	Internal Method
Melt Thermal Conductivity	1.1 Btu·in/hr/ft ² /°F	0.16 W/m/K	Internal Method
Ejection Temperature	284 °F	140 °C	Internal Method

Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	212 to 248 °F	100 to 120 °C
Drying Time	3.0 to 4.0 hr	3.0 to 4.0 hr
Rear Temperature	338 to 356 °F	170 to 180 °C
Middle Temperature	356 to 374 °F	180 to 190 °C
Front Temperature	356 to 374 °F	180 to 190 °C
Injection Zone 4 Temperature	374 to 392 °F	190 to 200 °C
Nozzle Temperature	374 to 392 °F	190 to 200 °C
Processing (Melt) Temp	356 to 374 °F	180 to 190 °C
Mold Temperature	176 to 248 °F	80 to 120 °C
Injection Rate	Slow-Moderate	Slow-Moderate
Back Pressure	< 580 psi	< 4.00 MPa
Hot Runner	356 to 392 °F	180 to 200 °C

Notes

¹ A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

² Typical properties: these are not to be construed as specifications.

³ 10°C/min

