

Celcon® M90™

Acetal (POM) Copolymer

Celanese Corporation

PROSPECTOR®

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Technical Data

Product Description

Celcon acetal copolymer grade M90™ is a medium viscosity polymer providing optimum performance in general purpose injection molding and extrusion of thin walled tubing and thin gauge film. This grade provides overall excellent performance in many applications.

Chemical abbreviation according to ISO 1043-1: POM

Please also see Hostaform® C 9021.

General

Material Status	• Commercial: Active
Literature ¹	• Technical Datasheet - ASTM (English) • Technical Datasheet - ISO (English)
UL Yellow Card ²	• E38860-239310 • E38860-101305515
Search for UL Yellow Card	• Celanese Corporation • Celcon®
Availability	• Latin America • North America
Features	• General Purpose • Medium Viscosity
Uses	• General Purpose • Thin-walled Parts • Tubing
RoHS Compliance	• Contact Manufacturer
Processing Method	• Injection Molding
Multi-Point Data	• Isochronous Stress vs. Strain (ISO 11403-1) • Isothermal Stress vs. Strain (ISO 11403-1)
Resin ID (ISO 1043)	• POM

Physical	Nominal Value Unit	Test Method
Specific Gravity	1.41 g/cm ³	ASTM D792 ISO 1183
Melt Mass-Flow Rate (MFR)	9.0 g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (190°C/2.16 kg)	8.00 cm ³ /10min	ISO 1133
Molding Shrinkage		
Flow	2.2 %	ASTM D955
Across Flow	1.8 %	ASTM D955
Across Flow	1.9 %	ISO 294-4
Flow	2.0 %	ISO 294-4
Water Absorption		ISO 62
Saturation, 23°C	0.75 %	
Equilibrium, 23°C, 50% RH	0.20 %	

Mechanical	Nominal Value Unit	Test Method
Tensile Modulus	2760 MPa	ISO 527-2/1A/1
Tensile Strength		
Yield, -40°C	94.5 MPa	ASTM D638
Yield, 23°C	60.7 MPa	ASTM D638
Yield, 71°C	34.5 MPa	ASTM D638
Yield	66.0 MPa	ISO 527-2/1A/50
Tensile Strain (Yield)	10 %	ISO 527-2/1A/50
Tensile Creep Modulus		ISO 899-1
1 hr	2450 MPa	
1000 hr	1350 MPa	
Flexural Modulus (23°C)	2550 MPa	ISO 178



Impact	Nominal Value Unit	Test Method
Charpy Notched Impact Strength		ISO 179/1eA
-30°C	6.0 kJ/m ²	
23°C	6.0 kJ/m ²	
Charpy Unnotched Impact Strength		ISO 179/1eU
-30°C	180 kJ/m ²	
23°C	190 kJ/m ²	
Notched Izod Impact Strength (23°C)	5.7 kJ/m ²	ISO 180/1A
Thermal	Nominal Value Unit	Test Method
Heat Deflection Temperature		
0.45 MPa, Unannealed	158 °C	ISO 75-2/B
1.8 MPa, Unannealed	110 °C	ASTM D648
1.8 MPa, Unannealed	101 °C	ISO 75-2/A
Melting Temperature ⁴	165 °C	ISO 11357-3 ASTM D3418
CLTE		ISO 11359-2
Flow	1.2E-4 cm/cm/°C	
Transverse	1.2E-4 cm/cm/°C	
Effective Thermal Diffusivity	0.0485 cSt	Internal Method
Electrical	Nominal Value Unit	Test Method
Surface Resistivity	3.0E+16 ohms	IEC 60093
Volume Resistivity		
--	1.0E+14 ohms·cm	ASTM D257
--	8.0E+14 ohms·cm	IEC 60093
Fill Analysis	Nominal Value Unit	Test Method
Density of Melt	1.200 g/cm ³	Internal Method
Specific Heat Capacity of Melt	2210 J/kg/°C	Internal Method
Thermal Conductivity of Melt	0.16 W/m/K	Internal Method
Injection	Nominal Value Unit	Test Method
Drying Temperature	80.0 to 100 °C	
Drying Time	3.0 hr	
Rear Temperature	170 to 180 °C	
Middle Temperature	180 to 190 °C	
Front Temperature	180 to 190 °C	
Nozzle Temperature	190 to 200 °C	
Processing (Melt) Temp	180 to 200 °C	
Mold Temperature	80.0 to 120 °C	
Injection Pressure	60.0 to 120 MPa	
Injection Rate	Slow-Moderate	
Holding Pressure	60.0 to 120 MPa	
Back Pressure	0.00 to 4.00 MPa	
Ejection Temperature	140 °C	Internal Method
Injection Notes		
Manifold Temperature: 180 to 200°C		
Zone 4 Temperature: 190 to 200°C		



Notes

¹ These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

² 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.

³ Typical properties: these are not to be construed as specifications.

⁴ 10°C/min



Where to Buy

Supplier

Celanese Corporation
Florence, KY USA
Telephone: 800-833-4882
Web: <http://www.celanese.com/engineered-materials>

Distributor

Amco Polymers
Telephone: 800-262-6685
Web: <http://www.amcopolymers.com/>
Availability: North America

Channel Prime Alliance
Telephone: 800-247-8038
Web: <http://www.channelpa.com/>
Availability: North America

Entec Polymers
Telephone: 800-375-5440
Web: <http://www.entecpolymers.com/>
Availability: North America

