

Celcon® M90™

Acetal (POM) Copolymer

Celanese Corporation

Message:

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 Information			
UL YellowCard	E38860-239310	E38860-101305515	
Features	General		
	Medium viscosity		
Uses	Thin wall parts		
	Pipe fittings		
	General		
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
Transverse flow	1.8	%	ASTM D955
Vertical flow direction	1.9	%	ISO 294-4
Flow direction	2.0	%	ISO 294-4
Water Absorption			
Saturated, 23°C	0.75	%	ISO 62
Equilibrium, 23°C, 50% RH	0.20	%	ISO 62
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	ISO 899-1
1000 hr	1350	MPa	ISO 899-1
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	ISO 179/1eA
23°C	6.0	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength			ISO 179/1eU
-30°C	180	kJ/m ²	ISO 179/1eU
23°C	190	kJ/m ²	ISO 179/1eU
Notched Izod Impact (23°C)	5.7	kJ/m ²	ISO 180/1A
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, not annealed	158	°C	ISO 75-2/B
1.8 MPa, not annealed	110	°C	ASTM D648
1.8 MPa, not annealed	101	°C	ISO 75-2/A
Melting Temperature ¹	165	°C	ISO 11357-3, ASTM D3418
Linear thermal expansion coefficient			ISO 11359-2
Flow	1.2E-4	cm/cm/°C	ISO 11359-2
Lateral	1.2E-4	cm/cm/°C	ISO 11359-2
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
Ejection Temperature	165	°C	Internal method
Specific Heat Capacity of Melt	2210	J/kg/°C	Internal method
Thermal Conductivity of Melt	0.16	W/m/K	Internal method
Effective Thermal Diffusivity	0.0485	cSt	Internal method
Injection	Nominal Value	Unit	
Drying Temperature	80.0 - 100	°C	
Drying Time	3.0	hr	
Rear Temperature	170 - 180	°C	
Middle Temperature	180 - 190	°C	
Front Temperature	180 - 190	°C	

Nozzle Temperature	190 - 200	°C
Processing (Melt) Temp	180 - 200	°C
Mold Temperature	80.0 - 120	°C
Injection Pressure	60.0 - 120	MPa
Injection Rate	Slow-Moderate	
Holding Pressure	60.0 - 120	MPa
Back Pressure	0.00 - 0.500	MPa

Injection instructions

Manifold Temperature: 180 to 200°CZone 4 Temperature: 190 to 200°C

NOTE

1. 10°C/min

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