Celcon® M90™

Celanese Corporation - Acetal (POM) Copolymer

Saturday, November 2, 2019

General Information

Product Description

Celcon acetal copolymer grade M90TM 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		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Features	• General Purpose	• Medium Viscosity	
Uses	• Film	• General Purpose	• Tubing
RoHS Compliance	• Contact Manufacturer		
Processing Method	• Extrusion	• Injection Molding	
Resin ID (ISO 1043)	• POM		

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density	1.41	g/cm³	ISO 1183
Melt Volume-Flow Rate (MVR) (190°C/2.16 kg)	8.00	cm³/10min	ISO 1133
Molding Shrinkage			ISO 294-4
Across Flow	1.9	%	
Flow	2.0	%	
Water Absorption (Saturation, 73°F)	0.75	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.20	%	ISO 62

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	400000	psi	ISO 527-2/1A
Tensile Stress (Yield)	9430	psi	ISO 527-2/1A/50
Tensile Strain (Yield)	10	%	ISO 527-2/1A/50
Tensile Creep Modulus (1 hr)	355000	psi	ISO 899-1
Tensile Creep Modulus (1000 hr)	196000	psi	ISO 899-1
Flexural Modulus (73°F)	370000	psi	ISO 178
Flexural Stress (3.5% Strain)	10600	psi	ISO 178
Compressive Stress			ISO 604
1% Strain	3770	psi	
6% Strain	12800	psi	

Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F	2.9	ft·lb/in²	
73°F	2.9	ft·lb/in²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F	86	ft·lb/in²	
73°F	89	ft·lb/in²	
Notched Izod Impact Strength			ISO 180/1A
-22°F	2.6	ft·lb/in²	
73°F	2.7	ft·lb/in²	

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Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (66 psi, Unannealed)	316	°F	ISO 75-2/B
Heat Deflection Temperature (264 psi, Unannealed)	214	°F	ISO 75-2/A
Vicat Softening Temperature	322	°F	ISO 306/B50
Melting Temperature [2]	331	°F	ISO 11357-3
Melting Temperature	329	°F	
CLTE - Flow	6.7E-5	in/in/°F	ISO 11359-2
CLTE - Transverse	6.7E-5	in/in/°F	ISO 11359-2
Effective Thermal Diffusivity	4.85E-8	m²/s	Internal Method

Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	3.0E+16	ohms	IEC 60093
Volume Resistivity	8.0E+14	ohms·cm	IEC 60093

Fill Analysis	Nominal Value	Unit	Test Method
Melt Density	1.20	g/cm³	Internal Method
Melt Thermal Conductivity	1.1	Btu·in/hr/ft²/°F	Internal Method
Ejection Temperature	284	°F	
Specific Heat Capacity of Melt	0.528	Btu/lb/°F	

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	212 to 248	°F
Drying Time	3.0 to 4.0	hr
Rear Temperature	338 to 356	°F
Middle Temperature	356 to 374	°F
Front Temperature	356 to 374	°F
Nozzle Temperature	374 to 392	°F
Processing (Melt) Temp	356 to 392	°F
Mold Temperature	176 to 248	°F
Injection Rate	Slow-Moderate	
Back Pressure	< 580	psi

Injection Notes

Zone4 temperature: 190 to 200°C

Hot runner temperature: 180 to 200°C

Flow temperature: 174°C

No flow temperature: 160°C

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] 10°C/min