Celcon® M90™

Celanese Corporation - Acetal (POM) Copolymer

Thursday, October 10, 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, 23°C)	0.75	%	ISO 62
Water Absorption (Equilibrium, 23°C, 50% RH)	0.20	%	ISO 62
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	2760	MPa	ISO 527-2/1A
Tensile Stress (Yield)	65.0	MPa	ISO 527-2/1A/50
Tensile Strain (Yield)	10	%	ISO 527-2/1A/50
Tensile Creep Modulus (1 hr)	2450	MPa	ISO 899-1
Tensile Creep Modulus (1000 hr)	1350	MPa	ISO 899-1
Flexural Modulus (23°C)	2550	MPa	ISO 178
Flexural Stress (3.5% Strain)	73.0	MPa	ISO 178
Compressive Stress			ISO 604
1% Strain	26.0	MPa	
6% Strain	88.0	MPa	
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength			ISO 179/1eA
-30°C	6.0	kJ/m²	
23°C	6.0	kJ/m²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-30°C	180	kJ/m²	
23°C	190	kJ/m²	

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Impact	Nominal Value	Unit	Test Method
Notched Izod Impact Strength			ISO 180/1A
-30°C	5.5	kJ/m²	
23°C	5.7	kJ/m²	
Thermal	**Nominal Value**	**Unit**	**Test Method**
Heat Deflection Temperature (0.45 MPa, Unannealed)	158	°C	ISO 75-2/B
Heat Deflection Temperature (1.8 MPa, Unannealed)	101	°C	ISO 75-2/A
Vicat Softening Temperature	161	°C	ISO 306/B50
Melting Temperature [2]	166	°C	ISO 11357-3
Melting Temperature	165	°C	
CLTE - Flow	1.2E-4	cm/cm/°C	ISO 11359-2
CLTE - Transverse	1.2E-4	cm/cm/°C	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	0.16	W/m/K	Internal Method
Ejection Temperature	140	°C	
Specific Heat Capacity of Melt	2210	J/kg/°C	

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	100 to 120	°C
Drying Time	3.0 to 4.0	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 to 120	°C
Injection Rate	Slow-Moderate	
Back Pressure	< 4.00	MPa

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