DELRIN 500P NC010

Delrin USA, LLC - ***Acetal (POM) Homopolymer***

General Information

General			
Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Additive	• Mold Release		
Features	• General Purpose • Good Mold Release • Good Processability	• Good Thermal Stability • Homopolymer • Low VOC	• Medium Viscosity
Uses	• General Purpose		
RoHS Compliance	• Contact Manufacturer		
Automotive Specifications	• ASTM D6778 POM0113 • FORD WSK-M4D637-A2	• GM GMP.POM.002 • GM GMW19P-POM-H3R	• IMDS ID 14075949 • STELLANTIS MS-DB-100 CPN2203
Part Marking Code (ISO 11469)	• >POM<		
Resin ID (ISO 1043)	• POM		

Properties [1]

Physical	Nominal Value	Unit	Test Method
Density	1.42	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	15	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (190°C/2.16 kg)	13	cm³/10min	ISO 1133
Molding Shrinkage			ISO 294-4
Across Flow	1.9	%	
Flow	2.0	%	
Water Absorption (Saturation, 73°F, 0.0787 in)	1.3	%	ISO 62
Water Absorption (Equilibrium, 73°F, 0.0787 in, 50% RH)	0.20	%	ISO 62
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	450000	psi	ISO 527-1
Tensile Stress (Yield)	10300	psi	ISO 527-2
Tensile Strain (Yield)	17	%	ISO 527-2
Nominal Tensile Strain at Break	30	%	ISO 527-2
Tensile Creep Modulus (1 hr)	406000	psi	ISO 899-1
Tensile Creep Modulus (1000 hr)	232000	psi	ISO 899-1
Flexural Modulus	435000	psi	ISO 178
Flexural Stress (3.5% Strain)	11600	psi	ISO 178
Poisson's Ratio	0.37		
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength			ISO 179/1eA
-40°F	3.8	ft·lb/in²	
-22°F	3.8	ft·lb/in²	
73°F	4.3	ft·lb/in²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F	130	ft·lb/in²	
73°F	140	ft·lb/in²	
Notched Izod Impact Strength			ISO 180/1A
-22°F	3.8	ft·lb/in²	
73°F	4.3	ft·lb/in²	
Unnotched Izod Impact Strength			ISO 180/1U

-22°F	120	ft·lb/in²	
73°F	130	ft·lb/in²	
Multi-Axial Instrumented Impact Energy (73°F)	2.21	ft·lb	ISO 6603-2
Multi-Axial Instrumented Impact Peak Force (73°F)	450	lbf	ISO 6603-2
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness			ISO 2039-2
M-Scale	92		
R-Scale	120		
Ball Indentation Hardness			ISO 2039-1
H 358/30	27800	psi	
H 961/30	24700	psi	
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (66 psi, Unannealed)	320	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	199	°F	ISO 75-2/A
Deflection Temperature Under Load (264 psi, Annealed)	230	°F	ISO 75-2/A
Vicat Softening Temperature	311	°F	ISO 306/B50
Ball Pressure Test (329°F)	Pass		IEC 60695-10-2
Melting Temperature [2]	352	°F	ISO 11357-3
CLTE - Flow	5.6E-5	in/in/°F	ISO 11359-2
CLTE - Transverse	5.6E-5	in/in/°F	ISO 11359-2
RTI Elec			UL 746B
0.030 in	122	°F	
0.06 in	230	°F	
0.12 in	230	°F	
RTI Imp			UL 746B
0.030 in	122	°F	
0.06 in	185	°F	
0.12 in	194	°F	
RTI Str			UL 746B
0.030 in	122	°F	
0.06 in	194	°F	
0.12 in	203	°F	
Annealing Temperature	320	°F	
Annealing Time - Optional	30.0	min/mm	
Effective Thermal Diffusivity	1.40E-10	in²/s	
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	4.0E+14	ohms	IEC 62631-3-2
Volume Resistivity	2.0E+12	ohms·m	IEC 62631-3-1
Electric Strength	1100	V/mil	IEC 60243-1
Relative Permittivity [3] (2.50 GHz)	3.10		IEC 61189-2-721
Relative Permittivity			IEC 62631-2-1
100 Hz	3.80		
1 MHz	3.80		
Dissipation Factor [3] (2.50 GHz)	0.043		IEC 61189-2-721
Dissipation Factor			IEC 62631-2-1
100 Hz	9.0E-3		
1 MHz	9.0E-3		
Comparative Tracking Index	600	V	IEC 60112
Flammability	**Nominal Value**	**Unit**	**Test Method**
Burning Rate [4] (0.0394 in)	0.79	in/min	ISO 3795
Flame Rating			UL 94
0.031 in	HB		
0.06 in	HB		
Flammability Classification			IEC 60695-11-10, -20
0.03 in	HB		
0.06 in	HB		
ammability Index			IEC 6069
	1020	°F	
	1020	°F	
	1020	°F	

Oxygen Index	22	%	ISO 4589-2
FMVSS Flammability	B		FMVSS 302
Fill Analysis	**Nominal Value**	**Unit**	**Test Method**
Melt Density	1.19	g/cm³	
Thermal Conductivity of Melt	1.7	Btu·in/hr/ft²/°F	ISO 22007-2
Additional Information	**Nominal Value**	**Unit**	**Test Method**
Emission	< 8	ppm	VDA 275
Fogging			ISO 6452
F-value (refraction)	90	%	
G-value (condensate)	0.35	mg	

Processing Information

Injection	**Nominal Value**	**Unit**
Drying Temperature	176	°F
Drying Time - Desiccant Dryer	2.0 to 4.0	hr
Suggested Max Moisture	< 0.20	%
Processing (Melt) Temp	410 to 428	°F
Melt Temperature, Optimum	419	°F
Mold Temperature	176 to 212	°F
Mold Temperature, Optimum	194	°F
Holding Pressure	11600 to 14500	psi
Drying Recommended	yes	
Hold Pressure Time	8.00	s/mm
Maximum Screw Tangential Speed	709	in/min

Notes

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

[2] 10°C/min

[3] printed circuits and boards

[4] FMVSS 302