

Zytel® FG101 NC010

NYLON RESIN
DuPont Performance Polymers

Message:
Unreinforced Polyamide 66

General Information				
RoHS Compliance		Contact manufacturer		
Forms		Particle		
Processing Method		Injection molding		
Part Marking Code (ISO 11469)		>PA66		
Resin ID (ISO 1043)		PA66		
Physical	Dry	Conditioned	Unit	Test Method
Density	1.14	--	g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR) (275°C/1.2 kg)	24.0	--	cm ³ /10min	ISO 1133
Molding Shrinkage				ISO 294-4
Transverse flow	1.4	--	%	ISO 294-4
Flow	1.4	--	%	ISO 294-4
Water Absorption				ISO 62
Saturated, 23°C, 2.00mm	8.5	--	%	ISO 62
Balance, 23°C, 2.00mm, 50% RH	2.6	--	%	ISO 62
Viscosity Number	145	--	cm ³ /g	ISO 307
Hardness	Dry	Conditioned	Unit	Test Method
Ball Indentation Hardness				ISO 2039-1
H 358/30	180	85.0	MPa	ISO 2039-1
H 961/30	160	--	MPa	ISO 2039-1
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	3100	1400	MPa	ISO 527-2
Tensile Stress (Yield)	82.0	55.0	MPa	ISO 527-2
Tensile Strain (Yield)	4.5	25	%	ISO 527-2
Nominal Tensile Strain at Break	25	> 50	%	ISO 527-2
Tensile Creep Modulus				ISO 899-1
1 hr	--	1200	MPa	ISO 899-1
1000 hr	--	700	MPa	ISO 899-1
Flexural Modulus	2800	1200	MPa	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA

-30°C	4.5	3.0	kJ/m ²	ISO 179/1eA
23°C	5.5	15	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	400 kJ/m ²	No Break		ISO 179/1eU
23°C	No Break	No Break		ISO 179/1eU
Notched Izod Impact				ISO 180/1A
-40°C	5.5	--	kJ/m ²	ISO 180/1A
-30°C	5.5	--	kJ/m ²	ISO 180/1A
23°C	5.5	12	kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength				ISO 180/1U
-30°C	300	--	kJ/m ²	ISO 180/1U
23°C	No Break	No Break		ISO 180/1U
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, not annealed	190	--	°C	ISO 75-2/B
1.8 MPa, not annealed	70.0	--	°C	ISO 75-2/A
Glass Transition Temperature ¹	60.0	--	°C	ISO 11357-2
Vicat Softening Temperature	240	--	°C	ISO 306/B50
Melting Temperature ²	262	--	°C	ISO 11357-3
Linear thermal expansion coefficient				ISO 11359-2
Flow	1.0E-4	--	cm/cm/°C	ISO 11359-2
Lateral	1.1E-4	--	cm/cm/°C	ISO 11359-2
Effective Thermal Diffusivity	5.00E-8	--	m ² /s	
FMVSS Flammability	DNI	--		FMVSS 302
Fogging				ISO 6452
F-value (refraction)	99	--	%	ISO 6452
G-value (condensate)	1.0E-4	--	g	ISO 6452
Specific Heat Capacity of Melt	2790	--	J/kg/°C	
Thermal Conductivity of Melt	0.16	--	W/m/K	
Emission of Organic Compounds	5.00	--	µgC/g	VDA 277
Odor	3.00	--		VDA 270
Melt Temperature, Optimum	290		°C	
Mold Temperature, Optimum	70		°C	
Drying Recommended	yes			

Hold Pressure Time	4.00		s/mm	
Maximum Screw Tangential Speed	400		mm/sec	
Extrusion Melt Temperature, Optimum	285		°C	
Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	--	1.0E+12	ohms	IEC 60093
Volume Resistivity	1.0E+15	1.0E+13	ohms·cm	IEC 60093
Dielectric Strength	32	28	kV/mm	IEC 60243-1
Relative Permittivity				IEC 60250
100 Hz	3.80	6.00		IEC 60250
1 MHz	3.50	4.00		IEC 60250
Dissipation Factor				IEC 60250
100 Hz	8.0E-3	0.21		IEC 60250
1 MHz	0.018	0.075		IEC 60250
Flammability	Dry	Conditioned	Unit	Test Method
Flammability Classification				IEC 60695-11-10, -20
0.71 mm	V-2	--		IEC 60695-11-10, -20
1.5 mm	V-2	--		IEC 60695-11-10, -20
Oxygen Index	28	--	%	ISO 4589-2
Fill Analysis	Dry	Conditioned	Unit	Test Method
Melt Density	0.980	--	g/cm ³	
Ejection Temperature	190	--	°C	
Injection	Dry	Unit		
Drying Temperature	80		°C	
Drying Time - Desiccant Dryer	2.0 - 4.0		hr	
Suggested Max Moisture	0.20		%	
Processing (Melt) Temp	280 - 300		°C	
Mold Temperature	50 - 90		°C	
Holding Pressure	50.0 - 100		MPa	
Extrusion	Dry	Unit		
Drying Temperature	80		°C	
Drying Time	4.0 - 6.0		hr	
Melt Temperature	275 - 290		°C	
NOTE				
1.	10°C/min			
2.	10°C/min			

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