

Zytel® 70G33HS1L BK031

Celanese Corporation - NYLON RESIN

General Information				
Product Description				
33% Glass Reinforced, Heat Stabilized, Polyamide 66				
General				
Material Status	• Commercial: Active			
Availability	• Africa&MiddleEast • AsiaPacific	•Europe •LatinAmerica	• North America	
Filler / Reinforcement	• Glass Fiber, 33% Filler by Weight			
Additive	• Heat Stabilizer			
Features	• Heat Stabilized			
Automotive Specifications	• ASTMD4066PA012G35 • ASTMD6779PA012G35 • CHRYSLERMS-DB-41 CPN1900 • DELPHI 7826921 • DELPHIDX300293 • Injection Molding	• DELPHIM-53103 • DELPHIM-5543 • FORDESE-M4D287-A • FORDESE-M4D287-B • FORDESE-M4D287-B Color: Black	• FORD WSK-M4D663-A • FORD WSS-M4D673-B1 • GM GMP.PA66.013 • GM GMW3038P-PA66-GF35H • PSA Peugeot-Citroën SPA X62 4100	
Processing Method	• >PA66-GF33<			
Part Marking Code (ISO 11469)	• PA66-GF33			
Resin ID (ISO 1043)	• ISO 16396-PA66,GF33,M1CGHR,S14-110			
ISO Designation				

ASTM & ISO Properties 1				
Physical	Dry	Conditioned	Unit	Test Method
Density	1.39	--	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR)	29	--	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR)				ISO 1133
275°C/5.0 kg	21	--	cm ³ /10min	
Molding Shrinkage				ISO 294-4
Across Flow	1.1	--	%	
Flow	0.30	--	%	
Water Absorption (24 hr, 23°C)	1.2	--	%	ISO 62
Water Absorption				ISO 62
Saturation, 23°C, 2.00 mm	5.7	--	%	
Water Absorption				ISO 62
Equilibrium, 23°C, 2.00 mm, 50% RH	1.8	--	%	
Viscosity Number	143	--	cm ³ /g	ISO 307, 1628
Mechanical	Dry	Conditioned	Unit	Test
Tensile Modulus	11000	8000	MPa	Method
Tensile Stress (Break)	200	140	MPa	ISO 527-1
Tensile Strain (Break)	3.0	5.0	%	ISO 527-2/5
Flexural Modulus	8500	6000	MPa	ISO 527-2/5
Flexural Stress	280	200	MPa	ISO 178
Poisson's Ratio	0.34	0.34		ISO 178

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Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-40°C	10	10	kJ/m	
23°C	13	17	²	
Charpy Unnotched Impact Strength			kJ/m	ISO 179/1eU
23°C	75	80	kJ/m ²	
Notched Izod Impact Strength				ISO 180/1A
-40°C	10	10	kJ/m	
23°C	12	15	²	
Unnotched Izod Impact Strength			kJ/m	ISO 180/1U
-30°C	80	--	kJ/m ²	
23°C	80	--	kJ/m ²	
Hardness	Dry	Conditioned	Unit	Test
Rockwell Hardness (M-Scale)	101	--		Method
Ball Indentation Hardness				ISO 2039-2
H 961/30	280	--	MPa	ISO 2039-1
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load				ISO 75-2/B
0.45 MPa, Unannealed	261	--	°C	
Deflection Temperature Under Load				ISO 75-2/A
1.8 MPa, Unannealed	252	--	°C	
Glass Transition Temperature 2	80.0	20.0	°C	ISO 11357-3
Melting Temperature 2	262	--	°C	ISO 11357-3
CLTE - Flow				ISO 11359-2
--	1.8E-5	--	cm/cm/°C	
-40 to 23°C	2.4E-5	--	cm/cm/°C	
55 to 160°C	1.3E-5	--	cm/cm/°C	
CLTE - Transverse				ISO 11359-2
--	8.3E-5	--	cm/cm/°C	
-40 to 23°C	6.5E-5	--	cm/cm/°C	
55 to 160°C	1.4E-4	--	cm/cm/°C	
Electrical	Dry	Conditioned	Unit	Test Method
Comparative Tracking Index (CTI) ³	PLC1	--		UL 746A
Comparative Tracking Index	400	--	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Burning Rate 4 (1.00 mm)	35	--	mm/min	ISO 3795 UL94
Flame Rating				
0.75 mm	HB	--		
1.5 mm	HB	--		
Flammability Classification				IEC 60695-11-10, -20
0.75 mm	HB	--		
1.5 mm	HB	--		
Glow Wire Ignition Temperature				IEC 60695-2-13
0.75 mm	750	--	°C	
1.5 mm	725	--	°C	
3.0 mm	825	--	°C	
FMVSS Flammability	B	--		FMVSS 302
Fill Analysis	Dry	Conditioned	Unit	
Ejection Temperature	208	--	°C	

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Additional Information	Dry	Conditioned	Unit	Test Method
Emission of Organic Compounds	10.0	--	µgC/g	VDA 277
Fogging - G-value (condensate)	0.60	--	mg	ISO 6452
Odor	3.00	--		VDA 270

Processing Information

Injection	Dry Unit
Drying Temperature	80°C
Drying Time - Desiccant Dryer	2.0 to 4.0 hr
Suggested Max Moisture	< 0.20 %
Processing (Melt) Temp	285 to 305 °C
Melt Temperature, Optimum	295 °C
Mold Temperature	70 to 120 °C
Mold Temperature, Optimum	100 °C
Holding Pressure	50.0 to 100 MPa
Drying Recommended	yes
Hold Pressure Time	3.00 s/mm
Screw Tangential Speed	< 12 m/min

Notes

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

² 10°C/min

³ 23°C

⁴ FMVSS 302, value for similar Zytel® 70G33L BK031