

Amilan® CM1011G-45

Polyamide 6
Toray Resin Company

Message:

Amilan® CM1011G-45 is a Polyamide 6 (Nylon 6) product filled with 45% glass fiber. It is available in Asia Pacific, Europe, or North America. Primary characteristic: flame rated.

General Information				
UL YellowCard		E41797-233418		
Filler / Reinforcement		Glass Fiber,45% Filler by Weight		
Part Marking Code		>PA6-GF45<		
Physical	Dry	Conditioned	Unit	Test Method
Density (23°C)	1.50	--	g/cm ³	ISO 1183
Molding Shrinkage				Internal Method
Across Flow : 3.00 mm ¹	0.40 to 0.60	--	%	
Flow : 3.00 mm ²	0.10 to 0.30	--	%	
Water Absorption				ISO 62
23°C, 24 hr	0.90	--	%	
Saturation, 23°C	5.3	--	%	
Hardness	Dry	Conditioned	Unit	Test Method
Rockwell Hardness				ISO 2039-2
M-Scale, 23°C	95	--		
R-Scale, 23°C	121	--		
R-Scale, 80°C	30	--		
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Stress				ISO 527-2
-40°C	290	250	MPa	
23°C	205	130	MPa	
80°C	120	85.0	MPa	
Tensile Strain				ISO 527-2
Break, -40°C	3.0	3.0	%	
Break, 23°C	3.0	3.0	%	
Break, 80°C	5.0	5.0	%	
Flexural Modulus				ISO 178
-40°C	16100	14300	MPa	
23°C	13800	8100	MPa	
80°C	7100	5000	MPa	
Flexural Stress				ISO 178
-40°C	385	325	MPa	
23°C	340	210	MPa	

80°C	185	125	MPa	
Compressive Stress				ISO 604
-40°C	260	220	MPa	
23°C	190	120	MPa	
80°C	100	70.0	MPa	
Shear Strength (23°C)	95.0	75.0	MPa	ASTM D732
Taber Abrasion Resistance (1000 Cycles)	0.350	--	mg	ISO 9352
Coefficient of Friction - vs. Metal ³	0.150	--		Suzuki Method
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
-40°C	15	17	kJ/m ²	
23°C	19	23	kJ/m ²	
Charpy Unnotched Impact Strength				ISO 179
-40°C	90	95	kJ/m ²	
23°C	100	120	kJ/m ²	
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature (0.45 MPa, Unannealed)	225	--	°C	ISO 75-2/B
Melting Temperature	225	--	°C	DSC
CLTE - Flow	2.0E-5 to 3.0E-5	--	cm/cm/°C	ISO 11359-2
Specific Heat	1400	--	J/kg/°C	
Thermal Conductivity	0.40	--	W/m/K	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity	1.0E+15	1.0E+12	ohms·cm	IEC 60093
Electric Strength	19	15	kV/mm	IEC 60243-1
Dielectric Constant ⁴				IEC 60250
23°C, 50 Hz	5.00	9.50		
23°C, 1 kHz	4.90	7.40		
23°C, 1 MHz	4.20	4.50		
Dissipation Factor ⁵				IEC 60250
23°C, 50 Hz	0.030	0.16		
23°C, 1 kHz	0.030	0.15		
23°C, 1 MHz	0.030	0.060		
Arc Resistance ⁶	104	109	sec	UL 746
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating (1.59 mm)	HB	--		UL 94
NOTE				
1.	80x80x3			
2.	80x80x3mm			

3.	Without Lubrication
4.	60% RH
5.	60% RH
6.	Tungsten Electrode

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