

Amilan® CM1012G-45N

Polyamide 6
Toray Resin Company

Message:

Amilan® CM1012G-45N is a Polyamide 6 (Nylon 6) product filled with 45% glass fiber. It is available in Asia Pacific, Europe, or North America. Primary characteristic: heat resistant.

General Information				
Filler / Reinforcement		Glass Fiber,45% Filler by Weight		
Features		Good Thermal Stability		
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	300	260	MPa	
23°C	220	140	MPa	
80°C	115	90.0	MPa	
Tensile Strain				ISO 527-2
Break, -40°C	3.5	3.0	%	
Break, 23°C	3.5	3.5	%	
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	360	230	MPa	

80°C	190	130	MPa	
Compressive Stress				ISO 604
-40°C	280	230	MPa	
23°C	220	140	MPa	
80°C	110	80.0	MPa	
Shear Strength (23°C)	100	250	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	16	18	kJ/m ²	
23°C	19	24	kJ/m ²	
Charpy Unnotched Impact Strength				ISO 179
-40°C	120	140	kJ/m ²	
23°C	130	--	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	
NOTE				
1.	80x80x3			
2.	80x80x3mm			
3.	Without Lubrication			

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