

Amilan™ CM1012G-45 N Nylon 6

TECHNICAL DATA

Product Description

Heat stabilized, GF45%

Uses • Automotive Applications

Processing Method • Injection Molding

ISO Designation • >PA6-GF45<

Type • Nylon6/Reinforced

ASTM & ISO Properties

Physical	Dry	Water Absorption	Unit	Test Method
Density (23°C)	1.50	--	g/cm ³	ISO 1183
Molding Shrinkage ¹				Internal Method
Across Flow : 3.00 mm	0.40 to 0.60	--	%	
Flow : 3.00 mm	0.10 to 0.30	--	%	
Water Absorption ²				ISO 62
24 hr, 23°C	0.90	--	%	
Saturation, 23°C	5.3	--	%	
Mechanical	Dry	Water Absorption	Unit	Test Method
Tensile Strength				ISO 527-2
-40°C	300	260	MPa	
23°C	220	140	MPa	
80°C	115	90	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	MPa	
Shear Strength (23°C)	100	80	MPa	ASTM D732
Taber Abrasion Resistance				ISO 9352
1000 Cycles	30	--	mg	
Coefficient of Friction - vs. Metal ³	0.35	--		Suzuki Method

Impact	Dry	Water Absorption	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
-40°C	15.5	18.0	kJ/m ²	
23°C	18.5	23.5	kJ/m ²	
Charpy Unnotched Impact Strength				ISO 179
-40°C	120.0	140.0	kJ/m ²	
23°C	130.0	--	kJ/m ²	
Hardness	Dry	Water Absorption	Unit	Test Method
Rockwell Hardness				ISO 2039-2
M-Scale, 23°C	95	--		
R-Scale, 23°C	121	--		
Thermal	Dry	Water Absorption	Unit	Test Method
Deflection Temperature Under Load				
0.45 MPa, Unannealed	225	--	°C	ISO 75-2/B
1.8 MPa, Unannealed	215	--	°C	ISO 75-2/A
Melting Temperature	225	--	°C	DSC
Specific Heat	1400	--	J/kg/°C	
Thermal Conductivity	0.40	--	W/m/K	
Coefficient of Linear Thermal Expansion	2.0 to 3.0	--	cm ³ /cm/°C	ISO 11359-2
Flammability	Dry	Water Absorption	Unit	Test Method
Flame Rating (0.75 mm, BK)	HB	--		UL 94
Additional Information				
Dry	Conditioned Moisture Content 1.9%			

Notes

¹ 80x80x3mm

² in water

³ Without Lubrication

Toray Industries, Inc.

