

Amilan™ CM1011G-45 Nylon 6

TECHNICAL DATA

Product Description

Standard, GF45%

Uses

- Appliance Components
- Automotive Applications
- Automotive Electronics
- Automotive Under the Hood
- Construction Applications
- Electrical/Electronic Applications
- Office Automation Equipment
- Power/Other Tools
- Sporting Goods
- White Goods & Small Appliances

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
Spiral Flow ¹	230	--	mm	Internal Method
Molding Shrinkage ²				Internal Method
Across Flow : 3.00 mm	0.40 to 0.60	--	%	
Flow : 3.00 mm	0.10 to 0.30	--	%	
Water Absorption ³				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	290	250	MPa	
23°C	205	130	MPa	
80°C	120	85	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	MPa	
Shear Strength (23°C)	95	75	MPa	ASTM D732
Taber Abrasion Resistance				ISO 9352
1000 Cycles	30	--	mg	

Mechanical	Dry	Water Absorption	Unit	Test Method
Coefficient of Friction - vs. Metal ⁴	0.35	--		Suzuki Method
Impact	Dry	Water Absorption	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
-40°C	15.0	17.0	kJ/m²	
23°C	18.5	23.0	kJ/m²	
Charpy Unnotched Impact Strength				ISO 179
-40°C	90.0	95.0	kJ/m²	
23°C	100.0	120.0	kJ/m²	
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 ⁻⁵ /cm/°C	ISO 11359-2
Electrical	Dry	Water Absorption	Unit	Test Method
Volume Resistivity	1.0E+13	1.0E+10	ohms·m	IEC 60093
Electric Strength	19	15	kV/mm	IEC 60243-1
Dielectric Constant				IEC 60250
23°C, 50 Hz	5.0	9.5		
23°C, 1 kHz	4.9	7.4		
23°C, 1 MHz	4.2	4.5		
Dissipation Factor				IEC 60250
23°C, 50 Hz	0.030	0.160		
23°C, 1 kHz	0.030	0.150		
23°C, 1 MHz	0.030	0.060		
Arc Resistance	104	109	sec	UL 746
Flammability	Dry	Water Absorption	Unit	Test Method
Flame Rating (1.5 mm)	HB	HB		UL 94
Additional Information				
Dry	Water Absorption Moisture Content 1.9%			

Toray Industries, Inc.

