

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/cm³	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	

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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/m ²	
23°C	18.5	23.0	kJ/m ²	
Charpy Unnotched Impact Strength				ISO 179
-40°C	90.0	95.0	kJ/m ²	
23°C	100.0	120.0	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
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%

Notes
¹ Melt Temperature: 260°C, Injection Pressure: 900 bar, 2.00 mm

² 80x80x3mm

³ in water

⁴ Without Lubrication

Remarks for Handling

Safety Precautions

1. Refer to the Material Safety data sheet for AMILAN™ before use.
2. During drying and molding of AMILAN™, volatile components which can irritate eyes, nose, and throat may be released. When such heat treatment is performed, appropriate local ventilation measures should be taken.
3. Sweep up and dispose of spilled pellets to prevent slipping.
4. Don't pile stocks too high in order to avoid injury caused by the product falling.

Care in Handling

1. The figures described herein are representative values of natural colors obtained based on the specific test method, and are NOT guaranteed values.
2. For our colored products, the figures described herein will vary depending on the type and amount of pigment, dye, and additive used.
3. The information contained herein is currently information we can reasonably obtain. The information may be revised without notice.
4. The information contained herein, including but not limited to application examples, does NOT represent, warrant or guarantee the quality or safety of your products. When using our products for your or third party's products, in consideration of various relevant laws and regulations, industrial property rights, product standards, self-regulatory standards, etc., please conduct product test etc. and confirm the quality or safety by yourself.
5. The basis that show the combustion resistance described herein is only the evaluation result in the test performed on the test piece prepared by the procedure in accordance with each specific standard. It can NOT be applied to the risk assessment in an actual fire. Note: For UL certification values, please refer to the Yellow card issued by UL (File No. E41797).
6. When using with medical devices, food packages, safety instruments or toys for infant, and so on, consult us about the concrete application and usage beforehand by all means. Do NOT use our products for any medical internal implantation.
7. Regarding export of our products and exports of products incorporating our products, please comply with relevant laws and regulations such as foreign exchange and foreign trade laws.
8. Under the chemical substance management system of each country, the chemical substance used in our products is regulated, and it may be necessary to apply separately or it may not be possible to import or export. If you are an exporter or importer of our products, please contact us for regulatory compliance in your country.
9. Refer to Safety Data Sheet for this our product before use.
10. We make NO representation, warranty or guarantee whether expressed or implied, in respect of fitness for a particular purpose and safety of our products for your products. You will be responsible for ascertaining the suitability of our products for your purpose and safety.
11. During drying and molding, volatile components which can irritate eyes, nose, and throat may be released. When such heat treatment is performed, appropriate local ventilation measures should be taken.
12. Sweep up and dispose of spilled pellets to prevent slipping.
13. Don't pile stocks too high in order to avoid injury caused by the product falling.