



# Amilan™ CM1011G-15

Toray Industries, Inc. - Polyamide 6

## General Information

### Product Description

Standard, GF15%

### General

Filler / Reinforcement	• Glass Fiber, 15% Filler by Weight		
Features	• Chemical Resistant	• High Strength	
Uses	• Appliance Components • Automotive Applications • Automotive Under the Hood	• Construction Applications • Electrical/Electronic Applications • Office Automation Equipment	• Sporting Goods • White Goods & Small Appliances
Processing Method	• Injection Molding		
ISO Designation	• >PA6-GF15<		

## Properties <sup>1</sup>

Physical	Dry	Conditioned	Unit	Test Method
Density (73°F)	1.25	--	g/cm <sup>3</sup>	ISO 1183
Spiral Flow <sup>2</sup>	18.5	--	in	Internal Method
Molding Shrinkage <sup>3</sup>				Internal Method
Across Flow : 0.118 in	0.70 to 1.1	--	%	
Flow : 0.118 in	0.50 to 0.70	--	%	
Water Absorption <sup>4</sup> (24 hr, 73°F)	1.3	--	%	ISO 62
Water Absorption <sup>4</sup>				ISO 62
Saturation, 73°F	8.3	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Stress				ISO 527-2
-40°F	21800	17400	psi	
73°F	18900	9430	psi	
176°F	7980	4350	psi	
Tensile Strain				ISO 527-2
Break, -40°F	2.0	5.0	%	
Break, 73°F	2.5	6.0	%	
Break, 176°F	6.0	7.5	%	
Flexural Modulus				ISO 178
-40°F	1.06E+6	856000	psi	
73°F	841000	392000	psi	
176°F	334000	247000	psi	
Flexural Stress				ISO 178
-40°F	35500	--	psi	
73°F	29000	14500	psi	
176°F	14500	7250	psi	
Compressive Stress				ISO 604
-40°F	31900	20300	psi	
73°F	21800	10900	psi	
176°F	12300	6530	psi	
Shear Strength (73°F)	15200	--	psi	ASTM D732

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<b>Mechanical</b>	<b>Dry</b>	<b>Conditioned</b>	<b>Unit</b>	<b>Test Method</b>
Taber Abrasion Resistance 1000 Cycles	10.0	--	mg	ISO 9352
Coefficient of Friction - vs. Metal <sup>5</sup>	0.30	--		Suzuki Method
<b>Impact</b>	<b>Dry</b>	<b>Conditioned</b>	<b>Unit</b>	<b>Test Method</b>
Charpy Notched Impact Strength				ISO 179
-40°F	2.9	3.3	ft·lb/in <sup>2</sup>	
73°F	4.3	4.5	ft·lb/in <sup>2</sup>	
Charpy Unnotched Impact Strength				ISO 179
-40°F	9.5	12	ft·lb/in <sup>2</sup>	
73°F	24	29	ft·lb/in <sup>2</sup>	
<b>Hardness</b>	<b>Dry</b>	<b>Conditioned</b>	<b>Unit</b>	<b>Test Method</b>
Rockwell Hardness				ISO 2039-2
M-Scale, 73°F	90	--		
R-Scale, 73°F	119	--		
<b>Thermal</b>	<b>Dry</b>	<b>Conditioned</b>	<b>Unit</b>	<b>Test Method</b>
Deflection Temperature Under Load 66 psi, Unannealed	410	--	°F	ISO 75-2/B
Deflection Temperature Under Load 264 psi, Unannealed	347	--	°F	ISO 75-2/A
Melting Temperature	437	--	°F	DSC
Specific Heat	0.406	--	Btu/lb/°F	
Thermal Conductivity	2.2	--	Btu·in/hr/ft <sup>2</sup> /°F	
Coefficient of Linear Thermal Expansion	4.5	--	cm <sup>-5</sup> /cm/°C	ISO 11359-2
<b>Electrical</b>	<b>Dry</b>	<b>Conditioned</b>	<b>Unit</b>	<b>Test Method</b>
Volume Resistivity	1.0E+15	1.0E+12	ohms·cm	IEC 60093
Electric Strength	510	--	V/mil	IEC 60243-1
Dielectric Constant				IEC 60250
73°F, 50 Hz	4.50	--		
73°F, 1 kHz	4.30	--		
73°F, 1 MHz	3.70	--		
Dissipation Factor				IEC 60250
73°F, 50 Hz	0.050	--		
73°F, 1 kHz	0.040	--		
73°F, 1 MHz	0.030	--		
Arc Resistance	120	--	sec	UL 746
<b>Flammability</b>	<b>Dry</b>	<b>Conditioned</b>	<b>Unit</b>	<b>Test Method</b>
Flame Rating <sup>6</sup> (Equivalent)	HB	HB		Internal Method
<b>Additional Information</b>				
Dry	Water Absorption Moisture Content 3.0%			

**Notes**

- <sup>1</sup> Typical properties: these are not to be construed as specifications.
- <sup>2</sup> Melt Temperature: 500°F, Injection Pressure: 1.31E+4 psi, 0.0787 in
- <sup>3</sup> 80x80x3mm
- <sup>4</sup> in water
- <sup>5</sup> Without Lubrication
- <sup>6</sup> UL94