

# Amilan™ CM1001G-20

Toray Industries, Inc. - Polyamide 6

## General Information

### Product Description

High flow, GF20%

### General

Filler / Reinforcement	• Glass Fiber, 20% Filler by Weight		
Features	• Chemical Resistant	• High Flow	• High Strength
Uses	• Appliance Components • Construction Applications	• Electrical/Electronic Applications • Office Automation Equipment	• Sporting Goods • White Goods & Small Appliances
Processing Method	• Injection Molding		
ISO Designation	• >PA6-GF20<		

## Properties <sup>1</sup>

Physical	Dry	Conditioned	Unit	Test Method
Density (73°F)	1.29	--	g/cm <sup>3</sup>	ISO 1183
Molding Shrinkage <sup>2</sup>				Internal Method
Across Flow : 0.118 in	0.60 to 0.90	--	%	
Flow : 0.118 in	0.30 to 0.50	--	%	
Water Absorption <sup>3</sup> (24 hr, 73°F)	1.3	--	%	ISO 62
Water Absorption <sup>3</sup>				ISO 62
Saturation, 73°F	7.8	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Stress (73°F)	17400	--	psi	ISO 527-2
Tensile Strain				ISO 527-2
Break, -40°F	2.5	3.0	%	
Break, 73°F	3.0	4.5	%	
Break, 176°F	5.0	5.5	%	
Flexural Modulus				ISO 178
-40°F	1.26E+6	1.06E+6	psi	
73°F	986000	508000	psi	
176°F	464000	377000	psi	
Flexural Stress				ISO 178
-40°F	39900	--	psi	
73°F	29700	--	psi	
176°F	16700	--	psi	
Compressive Stress				ISO 604
-40°F	34800	--	psi	
73°F	22500	11600	psi	
176°F	13100	--	psi	
Shear Strength (73°F)	16700	9430	psi	ASTM D732
Taber Abrasion Resistance				ISO 9352
1000 Cycles	12.0	--	mg	
Coefficient of Friction - vs. Metal <sup>4</sup>	0.30	--		Suzuki Method

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<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	3.3	4.0	ft·lb/in <sup>2</sup>	
Charpy Unnotched Impact Strength				ISO 179
-40°F	12	14	ft·lb/in <sup>2</sup>	
73°F	26	33	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	92	--		
R-Scale, 73°F	120	--		
<b>Thermal</b>	<b>Dry</b>	<b>Conditioned</b>	<b>Unit</b>	<b>Test Method</b>
Deflection Temperature Under Load				ISO 75-2/B
66 psi, Unannealed	419	--	°F	
Deflection Temperature Under Load				ISO 75-2/A
264 psi, Unannealed	365	--	°F	
Melting Temperature	437	--	°F	DSC
Specific Heat	0.382	--	Btu/lb/°F	
Thermal Conductivity	2.3	--	Btu·in/hr/ft <sup>2</sup> /°F	
Coefficient of Linear Thermal Expansion	3	--	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	4.60	--		
73°F, 1 kHz	4.40	--		
73°F, 1 MHz	3.80	--		
Dissipation Factor				IEC 60250
73°F, 50 Hz	0.040	--		
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 (0.06 in)	HB	HB		UL 94

**Additional Information**

Dry Water Absorption Moisture Content 3.0%

**Notes**

<sup>1</sup> Typical properties: these are not to be construed as specifications.

<sup>2</sup> 80x80x3mm

<sup>3</sup> in water

<sup>4</sup> Without Lubrication