Amilan™ CM1012G-45 N

Toray Industries, Inc. - Polyamide 6

General Information			
Product Description			
Heat stabilized, GF45%			
General			
Filler / Reinforcement	• Glass Fiber, 45% Filler by Weight		
Additive	• Heat Stabilizer		
Features	• Chemical Resistant	• High Heat Resistance	• High Strength
Uses	• Automotive Applications		
Processing Method	• Injection Molding		
ISO Designation	• >PA6-GF45<		

Properties [1]				
Physical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Density (73°F)	1.50	--	g/cm³	ISO 1183
Molding Shrinkage [2]				Internal Method
Across Flow : 0.118 in	0.40 to 0.60	--	%	
Flow : 0.118 in	0.10 to 0.30	--	%	
Water Absorption [3] (24 hr, 73°F)	0.90	--	%	ISO 62
Water Absorption [3]				ISO 62
Saturation, 73°F	5.3	--	%	
Mechanical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Tensile Stress				ISO 527-2
-40°F	43500	37700	psi	
73°F	31900	20300	psi	
176°F	16700	13100	psi	
Tensile Strain				ISO 527-2
Break, -40°F	3.5	3.0	%	
Break, 73°F	3.5	3.5	%	
Break, 176°F	5.0	5.0	%	
Flexural Modulus				ISO 178
-40°F	2.34E+6	2.07E+6	psi	
73°F	2.00E+6	1.17E+6	psi	
176°F	1.03E+6	725000	psi	
Flexural Stress				ISO 178
-40°F	55800	47100	psi	
73°F	52200	33400	psi	
176°F	27600	18900	psi	
Compressive Stress				ISO 604
-40°F	40600	33400	psi	
73°F	31900	20300	psi	
176°F	16000	11600	psi	
Shear Strength (73°F)	14500	11600	psi	ASTM D732
Taber Abrasion Resistance				ISO 9352
1000 Cycles	30.0	--	mg	

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Mechanical	Dry	Conditioned	Unit	Test Method
Coefficient of Friction - vs. Metal [4]	0.35	--		Suzuki Method
Impact	**Dry**	**Conditioned**	**Unit**	**Test Method**
Charpy Notched Impact Strength				ISO 179
-40°F	7.4	8.6	ft·lb/in²	
73°F	8.8	11	ft·lb/in²	
Charpy Unnotched Impact Strength				ISO 179
-40°F	57	67	ft·lb/in²	
73°F	62	--	ft·lb/in²	
Hardness	**Dry**	**Conditioned**	**Unit**	**Test Method**
Rockwell Hardness				ISO 2039-2
M-Scale, 73°F	95	--		
R-Scale, 73°F	121	--		
Thermal	**Dry**	**Conditioned**	**Unit**	**Test Method**
Deflection Temperature Under Load				ISO 75-2/B
66 psi, Unannealed	437	--	°F	
Deflection Temperature Under Load				ISO 75-2/A
264 psi, Unannealed	419	--	°F	
Melting Temperature	437	--	°F	DSC
Specific Heat	0.335	--	Btu/lb/°F	
Thermal Conductivity	2.8	--	Btu·in/hr/ft²/°F	
Coefficient of Linear Thermal Expansion	2.0 to 3.0	--	cm^-5/cm/°C	ISO 11359-2
Flammability	**Dry**	**Conditioned**	**Unit**	**Test Method**
Flame Rating (0.030 in, BK)	HB	--		UL 94
Additional Information				
Dry	Conditioned Moisture Content 1.9%			

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] 80x80x3mm

[3] in water

[4] Without Lubrication