

Amilan™ CM1017XL3

Toray Industries, Inc. - Polyamide 6

General Information

Product Description

High cycle, Heat stabilized, Low temperature toughness

General

Additive	• Heat Stabilizer		
Features	• Chemical Resistant	• Fast Molding Cycle	• High Heat Resistance
Uses	• Appliance Components • Automotive Applications • Construction Applications	• Electrical/Electronic Applications • Fasteners • Fasteners	• Office Automation Equipment • Sporting Goods • White Goods & Small Appliances
Processing Method	• Injection Molding		
ISO Designation	• >PA6<		

Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density (73°F)	1.13	--	g/cm ³	ISO 1183
Spiral Flow ²	27.6	--	in	Internal Method
Molding Shrinkage				Internal Method
0.0394 in ³	0.70 to 1.1	--	%	
0.118 in ⁴	1.2 to 1.8	--	%	
Water Absorption ⁵ (24 hr, 73°F)	1.8	--	%	ISO 62
Water Absorption ⁵				ISO 62
Saturation, 73°F	11	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Stress				ISO 527-2
-40°F	16000	14500	psi	
73°F	11600	5080	psi	
176°F	3630	2900	psi	
Tensile Strain (Yield, 73°F)	1.5	--	%	ISO 527-2
Tensile Strain (Break, 73°F)	38	> 50	%	ISO 527-2
Flexural Modulus				ISO 178
-40°F	551000	522000	psi	
73°F	406000	116000	psi	
176°F	102000	43500	psi	
Flexural Stress				ISO 178
-40°F	19600	18100	psi	
73°F	16000	5800	psi	
176°F	5800	3630	psi	
Compressive Stress (73°F)	11600	--	psi	ISO 604
Shear Strength (73°F)	10200	9430	psi	ASTM D732
Taber Abrasion Resistance				ISO 9352
1000 Cycles	3.00 to 4.00	--	mg	
Coefficient of Friction - vs. Metal ⁶	0.15 to 0.20	--		Suzuki Method

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Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
-40°F	1.7	--	ft·lb/in ²	
73°F	2.4	15	ft·lb/in ²	
Charpy Unnotched Impact Strength				ISO 179
-40°F	No Break	--		
73°F	No Break	--		
Hardness	Dry	Conditioned	Unit	Test Method
Rockwell Hardness				ISO 2039-2
R-Scale, 73°F	119	90		
R-Scale, 176°F	80	--		
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load				ISO 75-2/B
66 psi, Unannealed	360	--	°F	
Melting Temperature	437	--	°F	DSC
Specific Heat	0.454	--	Btu/lb/°F	
Thermal Conductivity	1.7	--	Btu·in/hr/ft ² /°F	
Coefficient of Linear Thermal Expansion	8	--	cm ⁻⁵ /cm/°C	ISO 11359-2
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity	1.0E+14 to 1.0E+15	1.0E+11 to 1.0E+12	ohms·cm	IEC 60093
Electric Strength	510	--	V/mil	IEC 60243-1
Dielectric Constant				IEC 60250
73°F, 50 Hz	4.10	9.00		
73°F, 1 kHz	3.90	8.00		
73°F, 1 MHz	3.40	4.50		
Dissipation Factor				IEC 60250
73°F, 50 Hz	0.070	0.10		
73°F, 1 kHz	0.060	0.11		
73°F, 1 MHz	0.030	0.13		
Arc Resistance	120	--	sec	UL 746
Comparative Tracking Index (CTI)	> 600	--	V	UL 746A
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating (0.030 in)	V-2	V-2		UL 94
Additional Information				
Dry	Water Absorption Moisture Content 3.5%			

Notes

- ¹ Typical properties: these are not to be construed as specifications.
- ² Melt Temperature: 500°F, Injection Pressure: 1.31E+4 psi, 0.0787 in
- ³ 80x80x1mm
- ⁴ 80x80x3mm
- ⁵ in water
- ⁶ Without Lubrication