



Chemlon® AF417

Teknor Apex Company - Polyamide 66

General Information

Product Description

AF417 is a 33% glass fibre reinforced nylon 66 that offers excellent mechanical performance coupled with an improved surface finish. The grade is also heat stabilised and can be used at elevated temperatures.

General

Material Status	• Commercial: Active
Availability	• Europe
Filler / Reinforcement	• Glass Fiber, 33% Filler by Weight
Additive	• Heat Stabilizer
Features	• Good Surface Finish • Heat Stabilized • High Heat Resistance
Forms	• Pellets
Processing Method	• Injection Molding

ASTM & ISO Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density	1.40	--	g/cm ³	ISO 1183
Molding Shrinkage ²	0.70 to 1.3	--	%	Internal Method
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	1.8	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	1.38E+6	1.06E+6	psi	ISO 527-1
Tensile Stress (Break)	27600	20300	psi	ISO 527-2
Tensile Strain (Break)	3.0	4.0	%	ISO 527-2
Flexural Modulus	1.41E+6	841000	psi	ISO 178
Flexural Stress				ISO 178
-- ³	39200	--	psi	
-- ⁴	--	21800	psi	
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength	7.1	19	ft·lb/in ²	ISO 179
Charpy Unnotched Impact Strength	33	--	ft·lb/in ²	ISO 179
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load				ISO 75-2/B
66 psi, Unannealed	> 464	> 464	°F	
Deflection Temperature Under Load				ISO 75-2/A
264 psi, Unannealed	464	455	°F	
Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	1.0E+14	1.0E+11	ohms	IEC 60093
Volume Resistivity	1.0E+16	1.0E+14	ohms·cm	IEC 60093
Electric Strength (0.118 in)	410	360	V/mil	IEC 60243-1
Relative Permittivity	3.90	4.40		IEC 60250
Dissipation Factor (1 MHz)	0.020	0.080		IEC 60250
Comparative Tracking Index	> 600	> 600	V	IEC 60112

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Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
Teknor Apex test result	HB	--		
Glow Wire Flammability Index	1200	--	°F	IEC 60695-2-12
Oxygen Index	25	--	%	ISO 4589-2

Processing Information

Injection	Dry	Unit
Drying Temperature	176 to 212	°F
Drying Time	2.0	hr
Rear Temperature	518 to 554	°F
Middle Temperature	518 to 554	°F
Front Temperature	518 to 554	°F
Processing (Melt) Temp	< 572	°F
Mold Temperature	140 to 176	°F
Injection Rate	Fast	
Screw Speed	50 to 200	rpm

Injection Notes

Back Pressure: Low
Injection Pressure: High

The material is supplied dry and ready to mould in sealed, moisture proof sacks. No drying is necessary unless the material has been exposed to air for longer than three hours. The appearance of splash marks on the surface of mouldings indicates excessive moisture is present. Should drying become necessary two hours at 80 - 100°C in a vacuum oven is recommended. Alternatively material maybe dried for up to six hours in a hopper drier or an air-circulating oven at a temperature not exceeding 80°C.

Notes

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

² Mould shrinkage is significantly influenced by many factors including wall thickness, gating, component shape and moulding conditions. The range values stated were determined from specimen bar mouldings of 1.5mm to 4mm wall thickness. They are provided as a guide for comparison purposes only and no guarantee should be inferred from their inclusion. (Specimens measured in the dry state, 24 hours after moulding).

³ Break

⁴ Yield