Technical Data Sheet

SCHULAMID® XT 180 GF 35 BLACK 96.8001

Polyamide 66
Engineering Plastics

Product Description
35% glass fiber reinforced PA 66, for high temperature applications

General	
Filler / Reinforcement	• Glass Fiber, 35% Filler by Weight
Processing Method	• Injection Molding

Physical	Dry	Conditioned	Unit	Test Method
Density	1.40	--	g/cm³	ISO 1183/A
Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)	14	--	cm³/10min	ISO 1133
Molding Shrinkage				ISO 294-4
Across Flow	1.0	--	%	
Flow	0.20	--	%	
Viscosity Number				ISO 307
96% H2SO4 (Sulphuric Acid)	160	--	cm³/g	

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus				ISO 527-2/1A/1
73°F (23°C)	2.18E+6 (15000)	1.45E+6 (10000)	psi (MPa)	
140°F (60°C)	1.09E+6 (7500)	--	psi (MPa)	
176°F (80°C)	914000 (6300)	--	psi (MPa)	
212°F (100°C)	798000 (5500)	--	psi (MPa)	
248°F (120°C)	725000 (5000)	--	psi (MPa)	
Tensile Stress				ISO 527-2/1A/5
Break, 73°F (23°C)	31900 (220)	29000 (200)	psi (MPa)	
Break, 140°F (60°C)	18900 (130)	--	psi (MPa)	
Break, 176°F (80°C)	17400 (120)	--	psi (MPa)	
Break, 212°F (100°C)	16000 (110)	--	psi (MPa)	
Break, 248°F (120°C)	14500 (100)	--	psi (MPa)	

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Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Strain				ISO 527-2/1A/5
Break, 73°F (23°C)	3.0	4.0	%	
Break, 140°F (60°C)	7.0	--	%	
Break, 176°F (80°C)	8.0	--	%	
Break, 212°F (100°C)	8.0	--	%	
Break, 248°F (120°C)	8.0	--	%	
Flexural Modulus [1]	1.89E+6 (13000)	--	psi (MPa)	ISO 178
Flexural Stress [1]				ISO 178
4.0% Strain [2]	52200 (360)	--	psi (MPa)	
3.5% Strain	52200 (360)	--	psi (MPa)	
Impact	**Dry**	**Conditioned**	**Unit**	**Test Method**
Charpy Notched Impact Strength				ISO 179/1eA
-22°F (-30°C)	5.7 (12)	--	ft·lb/in² (kJ/m²)	
73°F (23°C)	7.6 (16)	10 (21)	ft·lb/in² (kJ/m²)	
Charpy Unnotched Impact Strength				ISO 179/1eU
-22°F (-30°C)	38 (80)	--	ft·lb/in² (kJ/m²)	
73°F (23°C)	No Break	No Break		
Thermal	**Dry**	**Conditioned**	**Unit**	**Test Method**
Heat Deflection Temperature				
66 psi (0.45 MPa), Unannealed	482 (250)	--	°F (°C)	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	473 (245)	--	°F (°C)	ISO 75-2/A
Electrical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Surface Resistivity	> 1.0E+15	> 1.0E+12	ohms	IEC 60093
Volume Resistivity	> 1.0E+13	> 1.0E+10	ohms·m	IEC 62631-3-1
Flammability	**Dry**	**Conditioned**	**Unit**	**Test Method**
Burning Rate				
0.0787 in (2.00 mm)	1.2 (30)	--	in/min (mm/min)	ISO 3795
0.0787 in (2.00 mm)	1.2 (30)	--	in/min (mm/min)	FMVSS 302
Flammability Classification				IEC 60695-11-10, -20
0.06 in (1.5 mm)	HB	--		
0.12 in (3.0 mm)	HB	--		

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Additional Information

Characteristic properties

"As a semi-crystalline thermoplastic SCHULAMID® XT possesses high rigidity, hardness and good cold impact resistance."

1.) Not for use in food contact applications
2.) Not for use in medical or pharmaceutical applications

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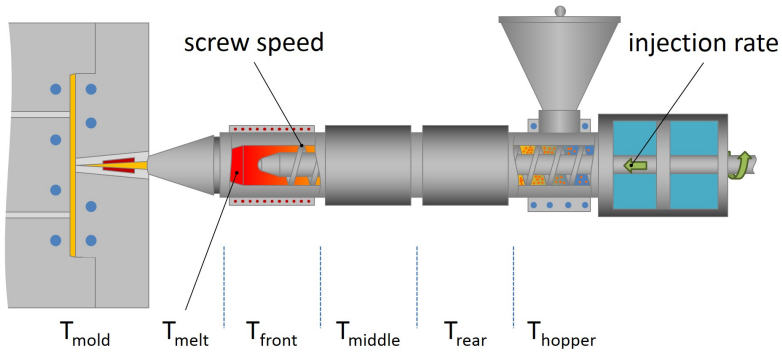

Injection	Dry (English)	Dry (SI)
Drying Temperature	176 °F	80 °C
Drying Time	3.0 to 4.0 hr	3.0 to 4.0 hr
Suggested Max Moisture	0.04 to 0.10 %	0.04 to 0.10 %
Suggested Max Regrind	10 %	10 %
Hopper Temperature	158 °F	70 °C
Rear Temperature	536 °F	280 °C
Middle Temperature	549 °F	287 °C
Front Temperature	559 °F	293 °C
Nozzle Temperature	572 °F	300 °C
Processing (Melt) Temp	536 to 572 °F	280 to 300 °C
Mold Temperature	176 to 248 °F	80 to 120 °C
Injection Pressure	14500 to 26100 psi	100 to 180 MPa
Injection Rate	Fast	Fast
Holding Pressure	4350 to 13100 psi	30.0 to 90.0 MPa
Back Pressure	290 to 1160 psi	2.00 to 8.00 MPa
Cushion	0.0787 to 0.197 in	2.00 to 5.00 mm
Screw Speed	< 300	< 300

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Injection Notes

Predrying

"Typically a minimum predrying time of 3 to 4 hours at 80°C is recommended in an dehumidifying dryer. For optimal qualities a humidity of 0,04 - 0,1 % is recommended.. Drying over 6 hours duration should occur at 60°C.should be placed in the hopper"

Reprocessing

Up to 20% regind may be used, in which case use of additional stabilisation is recommended as a safety precaution. Use only well dried regrind.

Shut down

Schulamid XT180 can normally be left in the cyclinder. If in doubt purge with polyolefin.

Finishing

"The material is suitable for machining. Varnishing, printing, gluing and embossing can be carried out using commercially available products. Later colouring is possible with azo-colours. Take care of the self-colour. For metalising in vacuum the articles must be primered."

Conditioning

"Recently processed moulding parts possess improved brittleness. The material picks up moisture until the equilibrium moisture content is reached regarding the surrounding atmosphere. This may last for over a half year. Then the article has reached his balanced property profile. For accelerated absoption see our separate Technical instruction."

Notes

[1] 0.079 in/min (2.0 mm/min)

[2] at break

Notes

These are typical property values not to be construed as specification limits.