

SCHULAMID® 6 GF 20 FR NATURAL

Polyamide 6
A. Schulman Europe

Message:
20% glass fibre reinforced flame-retardant Polyamide 6 grade (V-2); halogen free

General Information			
Filler / Reinforcement	Glass fiber reinforced material, 20% filler by weight		
Processing Method	Injection molding		
Resin ID (ISO 1043)	PA 6 GF 20 FR(30)		
Physical	Nominal Value	Unit	Test Method
Density	1.32	g/cm ³	ISO 1183/A
Viscosity Number (96% H2SO4)	180	cm ³ /g	ISO 307
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	5200	MPa	ISO 527-2/1A/1
Tensile Stress (Break)	70.0	MPa	ISO 527-2/1A/5
Tensile Strain (Break)	5.0	%	ISO 527-2/1A/5
Flexural Modulus	4600	MPa	ISO 178
Flexural Stress ¹			ISO 178
7.0% strain ²	105	MPa	ISO 178
3.5% strain	105	MPa	ISO 178
6.0% strain	115	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-30°C	4.0	kJ/m ²	ISO 179/1eA
23°C	6.0	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength			ISO 179/1eU
-30°C	40	kJ/m ²	ISO 179/1eU
23°C	55	kJ/m ²	ISO 179/1eU
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, not annealed	201	°C	ISO 75-2/Bf
1.8 MPa, not annealed	137	°C	ISO 75-2/Af
Continuous Use Temperature ³	90.0	°C	
Vicat Softening Temperature			
--	218	°C	ISO 306/A50
--	205	°C	ISO 306/B50
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	2.0E+14	ohms	IEC 60093
Volume Resistivity	8.0E+14	ohms · cm	IEC 60093

Dielectric Strength	35	kV/mm	IEC 60243-1
Comparative Tracking Index	600	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94, IEC 60695-11-10, -20
0.800 mm	V-2		UL 94, IEC 60695-11-10, -20
1.60 mm	V-2		UL 94, IEC 60695-11-10, -20
3.20 mm	V-2		UL 94, IEC 60695-11-10, -20
Glow Wire Flammability Index			IEC 60695-2-12
0.750 mm	960	°C	IEC 60695-2-12
1.50 mm	960	°C	IEC 60695-2-12
3.00 mm	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature			IEC 60695-2-13
0.750 mm	725	°C	IEC 60695-2-13
1.50 mm	725	°C	IEC 60695-2-13
3.00 mm	725	°C	IEC 60695-2-13

Additional Information

1.) Not for use in food contact applications2.) Not for use in medical or pharmaceutical applicationsCharacteristic propertiesSCHULAMID 6 ... FR is the trade name of the halogen and (red) phosphorous free flame retardant Polyamide 6 grades.

Injection	Nominal Value	Unit
Drying Temperature	80.0	°C
Drying Time	3.0 - 4.0	hr
Suggested Max Moisture	0.040 - 0.10	%
Hopper Temperature	70.0	°C
Rear Temperature	230	°C
Middle Temperature	245	°C
Front Temperature	260	°C
Processing (Melt) Temp	< 260	°C
Mold Temperature	60.0 - 100	°C
Injection Pressure	80.0 - 140	MPa
Injection Rate	Moderate	
Holding Pressure	40.0 - 85.0	MPa
Back Pressure	2.00 - 8.00	MPa
Screw Speed		mm/sec

Injection instructions

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 Addition of regrind is not recommended for nylons containing flame retardant.
Shut down Long residence time should be avoided. Purge with polyolefin or with base polymer.
Finishing The material is suitable for machining. Varnishing, printing, gluing and embossing can be carried out using commercially available products.
Conditioning Recently processed mouldings which not have been conditioned are brittle. The material picks up moisture until the equilibrium moisture content is reached. This may last for over a half year. Then the article has reached his balanced property profile. For accelerated absorption see our separate Technical instruction.
Remarks For permanent processing of glass fibre reinforced grades wear resistant screws and cylinders are recommended.

NOTE	
1.	2.0 mm/min
2.	at Break
3.	Long periode (20000h)

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