

TECHNYL® A 60G1 V30 BLACK 61

Polyamide 66
Solvay Engineering Plastics

Message:

TECHNYL® A 60G1 V30 Black 61 is a Non-halogenated flame retardant polyamide 66 reinforced with 30% of glass fiber, heat stabilized, for injection moulding. This grade offers excellent flame retardancy properties (UL 94, 5VA, GWIT) combined with excellent processing, mechanical and electrical performance. It can withstand temperatures of 160°C for over 6000 hours and has a UL F1 rating for weatherability resistance

General Information				
UL YellowCard		E44716-467001		
Filler / Reinforcement		Glass fiber reinforced material, 30% filler by weight		
Additive		heat stabilizer		
		Flame retardancy		
Features		Halogen-free		
Uses		Electrical/Electronic Applications		
Agency Ratings		EN 45545		
		NF F 16-101		
		UL QMFZ2		
RoHS Compliance		RoHS compliance		
Appearance		Black		
		Grey		
		Natural color		
Forms		Particle		
Processing Method		Injection molding		
Resin ID (ISO 1043)		PA66-GF30 FR(40)		
Physical	Dry	Conditioned	Unit	Test Method
Density	1.46	--	g/cm ³	ISO 1183/A
Water Absorption				ISO 62
23°C, 24 hr	0.73	--	%	ISO 62
Saturated, 23°C	4.3	--	%	ISO 62
Equilibrium, 23°C, 50% RH	1.8	--	%	ISO 62
Outdoor Suitability	f1	--		UL 746C
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	11700	8410	MPa	ISO 527-2/1A
Tensile Strength				
Fracture, 23°C	135	105	MPa	ASTM D638
Fracture, 23°C	145	110	MPa	ISO 527-2/1A

Tensile Elongation				
Fracture, 23°C	3.5	--	%	ASTM D638
Fracture, 23°C	2.3	4.0	%	ISO 527-2
Flexural Modulus (23°C)	11000	7900	MPa	ASTM D790, ISO 178
Flexural Strength				
23°C	220	180	MPa	ASTM D790
23°C	250	180	MPa	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	8.0	--	kJ/m ²	ISO 179/1eA
23°C	8.0	11	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	55	--	kJ/m ²	ISO 179/1eU
23°C	55	60	kJ/m ²	ISO 179/1eU
Notched Izod Impact (23°C)	80	--	J/m	ASTM D256
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature (1.8 MPa, Unannealed)				
	245	--	°C	ISO 75-2/Af
Melting Temperature	263	--	°C	ISO 11357-3
Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	2.0E+15	--	ohms	IEC 60093
Volume Resistivity	6.0E+14	--	ohms · cm	IEC 60093
Dielectric Strength (0.800 mm)	38	--	kV/mm	IEC 60243-1
Comparative Tracking Index (Solution A)	600	--	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.8 mm	V-0	--		UL 94
	V-0			
1.6 mm	5VA	--		UL 94
	V-0			
3.2 mm	5VA	--		UL 94
Glow Wire Flammability Index				IEC 60695-2-12
0.8 mm	960	--	°C	IEC 60695-2-12
1.6 mm	960	--	°C	IEC 60695-2-12
3.2 mm	960	--	°C	IEC 60695-2-12

Glow Wire Ignition Temperature (0.8 mm)	775	--	°C	IEC 60695-2-13
Oxygen Index	33	--	%	ISO 4589-2
French Fire Index	F3	--		NF F16-101
French Smoke Index	I3	--		NF F16-101
European Railways Certifications				EN 45545-2
R22	HL3	--		EN 45545-2
R23	HL3	--		EN 45545-2
Injection	Dry	Unit		
Drying Temperature	80		°C	
Suggested Max Moisture	0.20		%	
Rear Temperature	265 - 275		°C	
Middle Temperature	265 - 275		°C	
Front Temperature	270 - 280		°C	
Mold Temperature	60 - 90		°C	
Injection instructions				

The material is supplied in airtight bags, ready for use. In case that the virgin material has absorbed moisture, it must be dried with a dehumidified air drying equipment, dew point mini -20°C. Recommended time 2-4h. Injection Advice:

All reinforced flame retardant compounds generate some level of abrasion/corrosion to the steel processing equipment.

These issues can be worsened by using incorrect processing conditions (temperatures, residence time, moisture level ...) during the moulding process. Therefore, Solvay recommends to use the advised processing conditions detailed in this technical data sheet. For equipment that comes into contact with molten flame retarded compounds, Solvay advises to use a steel containing high chromium & high carbon content (minimum concentration of 16% Chromium) to prevent corrosion and abrasion. For the correct reference of steel associated to flame retardant compounds processing, please refer to your equipment manufacturers. For Mould Temperature, in the case of parts where the surface roughness is required we can recommend a temperature at 120°C. Of course it should be noted that this improvement in the surface appearance may be at the expense of the cycle time. The processing parameters like processing temperatures are a recommendation and can be adjusted in function of injection machine size, part geometry / design

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