TECHNYL®

TECHNYL® A 60G1 V30 BLACK 61

TECHNICAL DATA SHEET

Revised: August, 2018

TECHNYL® A 60G1 V30 Black 61 is a polyamide 66 based on a non-halogenated flame retardant system, 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

Material Status	• Commercial: Active	
Availability	• Latin America	
Filler / Reinforcement	• Glass Fiber, 30% Filler by Weight	
Additive	• Flame Retardant	• Heat Stabilizer
Key Benefits	• F1 UL Classification • GWIT 775°C at 0.8 mm thickness	• UL 94 5VA • UL 94 V0 at 0.8 mm
Applications	• Conversion Devices • Electrical protection devices	• Electrical vehicle charger • Electrical/Electronic Applications
Certification/Compliance	• EN 45545	• UL QMFZ2
RoHS Compliance	• RoHS Compliant	
Colors Available	• Black • Grey	• Natural Color
Forms	• Pellets	
Processing Method	• Injection Molding	
Resin ID (ISO 1043)	• PA66-GF30 FR(40)	

PROPERTIES

Typical values of properties are for Black grades

Physical	Dry	Conditioned	Unit	Test Method
Water Absorption				ISO 62
24 hr, 23°C	0.73		%	
Saturation, 23°C	4.3		%	
Equilibrium, 23°C, 50% RH	1.8		%	
Outdoor Suitability (All Colors)	f1			UL 746C
Density	1.46		g/cm³	ISO 1183/A

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	10200	8410	MPa	ISO 527-2/1A
Tensile Strength				
Break, 23°C	135	105	MPa	ASTM D638
Break, 23°C	145	110	MPa	ISO 527-2/1A

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Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Elongation				
Break, 23°C	3.5		%	ASTM D638
Break, 23°C	2.3	4.0	%	ISO 527-2
Flexural Modulus (23°C)	10000	7900	MPa	ASTM D790 ISO 178
Flexural Strength				
23°C	220	180	MPa	ASTM D790
23°C	250	180	MPa	ISO 178
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	8.0		kJ/m²	
23°C	8.0	11	kJ/m²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	55		kJ/m²	
23°C	55	60	kJ/m²	
Notched Izod Impact (23°C)	80		J/m	ASTM D256

Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				ISO 75-2/Af
1.8 MPa, Unannealed	245		°C	
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
Electric 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			
1.6 mm	•	V-0			
	•	5VA			
3.2 mm	•	V-0			
	•	5VA			
Glow Wire Flammability Index					IEC 60695-2-12
0.8 mm		960		°C	
1.6 mm		960		°C	
3.2 mm		960		°C	
Glow Wire Ignition Temperature (0.8 mm)		775		°C	IEC 60695-2-13
Oxygen Index		33		%	ISO 4589-2

Additional Information	Dry	Unit	Test Method
European Railways Certifications			EN 45545-2
R22	HL3		
R23	HL3		

PROCESSING

Injection	Dry	Unit
Drying Temperature	80	°C
Suggested Max Moisture	0.20	%
Rear Temperature	265 to 275	°C
Middle Temperature	265 to 275	°C
Front Temperature	270 to 280	°C
Mold Temperature	60 to 90	°C

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Injection Notes

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 may be magnified by using incorrect processing conditions (temperatures, residence time, moisture level ...) during the moulding process. Therefore, Solvay recommends you adhere to the processing conditions detailed in this technical data sheet. For equipment that comes into contact with molten flame retardant compounds, Solvay advises you to use a steel with high chromium and high carbon content (having a 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. In the case of high requirements on surface quality a mould temperature of up to 120°C can be considered.
- The processing parameters like processing temperatures are a recommendation and can be adjusted in function of injection machine size, part geometry / design

DISCLAIMER

SAFETY INFORMATION

Detailed information regarding safety are available on the safety data sheet (SDS). SDS is sent with the first material order or available by contacting our customer services

REGULATIONS COMPLIANCE

This product is not intended to be used for the following regulated market: food contact, drinking water, toys, cosmetics or medical devices.

This grade complies with ROHS Directive 2011/65/EU and 2015/863 as amended.

CUSTOMER SERVICES

Our customer services are not only concerned with manufacturing and supply of Engineering Plastics products. We are available to assist our customers in finding technical solutions that meet their requirements. Specific support is in particular offered on:

- Material selection
- Material testing
- Parts design advice, training for design engineers
- Part testing
- Design simulation
- Processing through different technologies
- Assembly and post-processing technology expertise
- Parts optimization through Computer Aided Design

You can find more information on Solvay Product range on our internet product finder at the following address: http://www.technyl.com

Notes

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