TECHNYL® ONE J 60X1 V30 BLACK

TECHNICAL DATA SHEET

Revised: November, 2017

TECHNYL® ONE J 60X1 V30 Black is a high temperature polyamide based on a non-halogenated flame retardant system, reinforced with 30% of glass fiber with best-in-class fire protection behavior, for injection moulding. A full yellow card is available with a UL94 V0 rating at 0.4 mm, unmatched thermal ageing properties (150°C electrical RTI - Relative Thermal Index), and outstanding electrical properties, including a high comparative tracking index (CTI 0 for 600 volts and higher). This product has superior electrical performance compared to traditional high-performance plastics.
Its low corrosion ensures processing tools longevity.
This Technyl is laser welding suitable.

This product, based on a high fluidity matrix, offers strong benefits in term of productivity and design freedom.

GENERAL

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Filler / Reinforcement	• Glass Fiber, 30% Filler by Weight	
Additive	• Flame Retardant	• Heat Stabilizer
Key Benefits	• High Arc Resistance • Lower Corrosivity • High Flow • IR Laser Markable	• Good Mold Release • RTI = 150°C at 0.4 mm thickness • Superior Surface Finish • UL 94 V0 at 0.4 mm
Applications	• Circuit Breaker • Conversion Devices • Electrical protection devices	• Electrical/Electronic Applications • Wiring & cables applications
Certification/Compliance	• EC 1907/2006 (REACH) • EN 45545	• NF F 16-101 • UL QMFZ2
RoHS Compliance	• RoHS Compliant	
Colors Available	• Black • Grey	• Natural Color • White
Forms	• Pellets	
Processing Method	• Injection Molding	
Resin ID (ISO 1043)	• PA66/6T-GF30 FR(40)	

PROPERTIES

Typical values of properties are for Black grades

Physical	Dry	Conditioned	Unit	Test Method
Molding Shrinkage				ISO 294-4
Across Flow	0.95		%	
Flow	0.30		%	
Water Absorption				ISO 62
24 hr, 23°C	0.63		%	
Equilibrium, 23°C, 50% RH	1.3		%	

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Physical	Dry	Conditioned	Unit	Test Method
Density	1.41		g/cm³	ISO 1183/A

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	11000	9100	MPa	ISO 527-2/1A
Tensile Stress (Break, 23°C)	145	110	MPa	ISO 527-2/1A
Tensile Strain (Break, 23°C)	2.5	3.3	%	ISO 527-2
Flexural Modulus (23°C)	9000	8000	MPa	ISO 178
Flexural Stress (23°C)	230	185	MPa	ISO 178
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	6.0		kJ/m²	
23°C	9.5	10	kJ/m²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	50		kJ/m²	
23°C	55	62	kJ/m²	
Notched Izod Impact Strength (23°C)	9.5		kJ/m²	ISO 180
Unnotched Izod Impact Strength (23°C)	55		kJ/m²	ISO 180/1U

Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, Unannealed	274		°C	ISO 75-2/Bf
1.8 MPa, Unannealed	257		°C	ISO 75-2/Af
Melting Temperature	280		°C	ISO 11357-3
RTI Elec (0.40 mm)	150		°C	UL 746

Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	2.0E+15		ohms	IEC 60093
Volume Resistivity	1.0E+15		ohms·cm	IEC 60093
Electric Strength (0.800 mm)	35		kV/mm	IEC 60243-1
Comparative Tracking Index (Solution A)	600		V	IEC 60112

Flammability		Dry	Conditioned	Unit	Test Method
Flame Rating					UL 94
0.40 mm		V-0			
0.8 mm	•	V-0			
	•	5VA			
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	

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Flammability	Dry	Conditioned	Unit	Test Method
Glow Wire Ignition Temperature				IEC
0.8 mm	800		°C	60695-2-13
1.6 mm	800		°C	
Oxygen Index	45		%	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	0.12	%
Rear Temperature	285 to 295	°C
Middle Temperature	290 to 300	°C
Front Temperature	290 to 300	°C
Mold Temperature	90 to 110	°C

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.

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.

Grades produced or imported in Europe comply with REACH directive 1907/2006/EC 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.