

TECHNICAL DATA SHEET

TECHNYL ONE J 60X1 V30 BK

TECHNYL ONE J 60X1 V30 BK 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

Feature	Halogen and red phosphorus free flame retardant Very high flow Excellent surface finish Laser weldable	Arc resistant Corrosion resistant IR-laser markable heat resistant
Polymer type	PA66/6T copolymer	
Processing technology	Injection molding	
Certification	RoHS EC 1907/2006 (REACH)	UL-Yellow Card European Railways Certifications EN 45545-2
Applications	Electrical/Electronic Applications	Wire & Cable
Colors available	Black Grey	Natural White
Forms	Pellets	

Product identification

ISO 1043 abbreviation	PA66/6T-GF30 FR(40)
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	Condition	Standard	Unit	Value
Physical properties				
Density		ISO 1183	g/cm³	1.41
Water absorption	24 hr, 23°C	ISO 62	%	0.63
Molding shrinkage, parallel		ISO 294-4, 2577	%	0.3
Molding shrinkage, normal		ISO 294-4, 2577	%	0.95

TECHNICAL DATA SHEET TECHNYL ONE J 60X1 V30 BK

	Condition	Standard	Unit	Value
Mechanical properties				dam / cond.*
Tensile modulus	1 mm/min	ISO 527-1/-2	MPa	11000 / 9100
Stress at break		ISO 527-1/-2	MPa	145 / 110
Strain at break		ISO 527-1/-2	%	2.5 / 3.3
Flexural modulus, ISO 178	2 mm/min	ISO 178	MPa	9000 / 8000
Flexural strength, ISO 178	2 mm/min	ISO 178	MPa	230 / 185
Charpy impact strength, +23°C	+23°C	ISO 179/1eU	kJ/m²	55 / 62
Charpy impact strength, -30°C	-30°C	ISO 179/1eU	kJ/m²	50 / -
Charpy notched impact strength, +23°C	+23°C	ISO 179/1eA	kJ/m²	9 / 10
Charpy notched impact strength, -30°C	-30°C	ISO 179/1eA	kJ/m²	9 / -
Izod impact strength, +23°C	+23°C	ISO 180/1U	kJ/m²	55 / -
Izod notched impact strength, +23°C	+23°C	ISO 180/1A	kJ/m²	9.5 / -

Thermal properties

Melting temperature, 10°C/min		ISO 11357-1	°C	280
Temp. of deflection under load, 0.45 MPa	0.45 MPa	ISO 75	°C	274
Temp. of deflection under load, 1.80 MPa	1.80 MPa	ISO 75	°C	257

Electrical properties

Volume resistivity		IEC 62631-3-1	ohm.m	1E+013
Surface resistivity		IEC 62631-3-1	ohm	2E+015
Comparative tracking index	Solution A	IEC 60112	V	600
CTI performance level category		Sol A		PLC 0
Dielectric strength	1 mm	IEC 60243-1	kV/mm	35

TECHNICAL DATA SHEET

TECHNYL ONE J 60X1 V30 BK

	Condition	Standard	Unit	Value
Burning behaviour				
UL Yellow Card availability 	Click here to have access to the UL Yellow Card → QMFZ2.E44716			
Flammability, 0.40 mm	0.40 mm	UL 94		V0
Flammability, 0.75 mm	0.75 mm	UL 94		5VA
Flammability, 1.5 mm	1.5 mm	UL 94		5VA
Flammability, 3.0 mm	3.0 mm	UL 94		5VA
Glow-wire flammability index, GWFI, 0.75 mm	0.75 mm	IEC 60695-2-12	°C	960
Glow-wire flammability index, GWFI, 1.5 mm	1.5 mm	IEC 60695-2-12	°C	960
Glow-wire flammability index, GWFI, 3.0 mm	3.0 mm	IEC 60695-2-12	°C	960
Glow-wire ignition temperature, GWIT, 0.75 mm	0.75 mm	IEC 60695-2-13	°C	800
Glow-wire ignition temperature, GWIT, 1.5 mm	1.5 mm	IEC 60695-2-13	°C	800
Oxygen index			%	45

*: conditioned according to ISO 1110

Processing conditions

Drying temperature/time	80 °C
Suggested max moisture	0.12 %
Rear temperature	285 - 295 °C
Middle temperature	290 - 300 °C
Front temperature	290 - 300 °C
Recommended mould temperature	90 - 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 minimum -20°C. Recommended time 2-4h, recommended water content maximum 0,15% (optimum 0,08%-0,12%)

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, Domo recommends you adhere to the processing conditions detailed in this technical data sheet. For equipment that comes into contact with molten flame retardant compounds, Domo 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

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