

EXPERIMENTAL DATASHEET

TECHNYL ONE J 60X1 V50 NC



TECHNYL ONE J 60X1 V50 NC is a high temperature polyamide based on a non halogenated flame retardant system and reinforced with 50% of glass fiber. This grade is consequently offering an outstanding overall compromise between fire protection performances, electrical insulation properties, very high stiffness & dimensional stability for demanding structural applications. This product being based on a high fluidity matrix is suitable for injection-molding process & offers interesting benefits in terms of processability linked to it.
It is currently under the name TECHNYL XHT 1709 NC.

General

Polymer type	PA66/6T copolymer	
Certifications	RoHS EC 1907/2006 (REACH)	UL listed product
Feature	flame retarded UL 94 V0 high stiffness CTI 600V GWIT > 800°C UL 94 5VA	halogen and red phosphorus free flame retardant heat resistant very high flow GWFI 960°C RTI electrical ≥130°C
Applications	automotive applications	electrical/electronic applications
Colors available	natural	grey
Forms	pellets	
Processing technology	injection moulding	

Product identification

ISO 1043 abbreviation	PA66/6T-GF50 FR(40)
ISO 16396 designation	PA66/6T,GF50,MH,S14-160

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	Condition	Standard	Unit	Value
Physical properties				
Density		ISO 1183	g/cm ³	1.63
Humidity absorption	T=23°C, 50% RH (equivalent ISO 1110)	ISO 62	%	1.1 - 1.2
Water absorption	24 hr, 23°C, immersion in water, thickness 2mm	ISO 62	%	0.45
Molding shrinkage, parallel		ISO 294-4, 2577	%	0.1 - 0.2
Molding shrinkage, normal		ISO 294-4, 2577	%	0.7 - 0.9
Viscosity number	96% H2SO4	ISO 307	cm ³ /g	80.0

	Condition	Standard	Unit	Value
Mechanical properties				dam / cond.*
Tensile modulus	1 mm/min	ISO 527-1/-2	MPa	16500 / -
Stress at break		ISO 527-1/-2	MPa	170 / -
Strain at break		ISO 527-1/-2	%	1.8 / -
Charpy impact strength, +23°C	+23°C	ISO 179/1eU	kJ/m ²	60 / -
Charpy impact strength, -30°C	-30°C	ISO 179/1eU	kJ/m ²	55 / -
Charpy notched impact strength, +23°C	+23°C	ISO 179/1eA	kJ/m ²	14 / -
Drop impact force		ISO 6603-02	N	890.0
Drop impact energy		ISO 6603-02	J	2.3

*: **conditioned according to ISO 1110**

	Condition	Standard	Unit	Value
Thermal properties				
Melting temperature, 10°C/min		ISO 11357-1	°C	280
Temp. of deflection under load, 1.80 MPa	1.80 MPa	ISO 75	°C	260

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	Condition	Standard	Unit	Value
Burning behaviour				
UL Yellow Card availability 1	Click here to have access to the UL Yellow Card availability 1 -> UL YC			
Flammability, 0.75 mm	0.75 mm	UL 94		V0,5VA
Flammability, 1.5 mm	1.5 mm	UL 94		V0,5VA
Flammability, 3.0 mm	3.0 mm	UL 94		V0,5VA
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			°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
Glow-wire ignition temperature, GWIT, 3.0 mm	3.0 mm	IEC 60695-2-13	°C	800
Burning rate, FMVSS, Thickness 1 mm		FMVSS 302		< 100mm/min

	Condition	Standard	Unit	Value
Electrical properties				
Comparative tracking index	Solution A	IEC 60112	V	600.0
CTI performance level category		Sol A		PLC 0
Dielectric strength	1,6mm thickness	IEC 60243-1	kV/mm	25.0

Processing conditions

Drying temperature/time	75-80°C / 3-4h (with dew point of dried air < -30 °C)
Suggested max moisture	0.12 %
Rear temperature	290 - 300 °C
Middle temperature	295 - 305 °C
Front temperature	300 - 310 °C

Processing conditions

Recommended melt temperature	295 - 305 °C
Recommended mould temperature	85 - 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.