TECHNYL® ONE
Enhanced electrical properties

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TECHNICAL DATA SHEET

TECHNYL ONE J 60X1 V30 GY 2771

TECHNYL ONE XJ 2498 GY 2771

TECHNYL ONE J 60X1 V30 GY 2771 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. This product, based on a high fluidity matrix, offers strong benefits in term of productivity and design freedom.

General

Polymer type	PA66/6T copolymer	
Certifications	RoHS EC 1907/2006 (REACH)	UL listed product EN 45545
Feature	flame retarded UL 94 V0 heat resistant CTI 600V RTI electrical ≥130°C	halogen and red phosphorus free flame retardant corrosion resistant very high flow GWIT 775°C UL 94 5VA
Applications	electrical/electronic applications	wire / cable applications
Colors available	black orange white	natural grey
Forms	pellets	
Processing technology	injection moulding	

Product identification

ISO 1043 abbreviation	PA66/6T-GF30 FR(40)
ISO 16396 designation	PA66/6T,GF30,MH,S14-110

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Physical properties

	Condition	Standard	Unit	Value
Density		ISO 1183	g/cm³	1.43
Water absorption	24 hr, 23°C, immersion in water, thickness 2mm	ISO 62	%	0.6 - 0.65
Molding shrinkage, parallel		ISO 294-4, 2577	%	0.2 - 0.4
Molding shrinkage, normal		ISO 294-4, 2577	%	0.9 - 1.1

Mechanical properties

	Condition	Standard	Unit	Value **dam / cond.***
Tensile modulus	1 mm/min	ISO 527-1/-2	MPa	11000 / 9100
Stress at break		ISO 527-1/-2	MPa	140 / 105
Strain at break		ISO 527-1/-2	%	2.3 / 3
Flexural modulus, ISO 178	2 mm/min	ISO 178	MPa	9000 / 8000
Flexural strength, ISO 178	2 mm/min	ISO 178	MPa	220 / 180
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	9.5 / -
Charpy notched impact strength, -30°C	-30°C	ISO 179/1eA	kJ/m²	10 / -
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 / -

: conditioned according to ISO 1110

Thermal properties

	Condition	Standard	Unit	Value
Melting temperature, 10°C/min		ISO 11357-1	°C	280
Temp. of deflection under load, 0.45 MPa	0.45 MPa	ISO 75	°C	260
Temp. of deflection under load, 1.80 MPa	1.80 MPa	ISO 75	°C	250

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Burning behaviour

	Condition	Standard	Unit	Value
Flammability, 0.40 mm	0.40 mm	UL 94		V0
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
Oxygen index			%	45.0
Burning rate, FMVSS, Thickness 1 mm		FMVSS 302		<100mm/min

Electrical properties

	Condition	Standard	Unit	Value
Volume resistivity		IEC 62631-3-1	ohm.m	1.0E13
Surface resistivity		IEC 62631-3-1	ohm	2.0E15
Comparative tracking index	Solution A	IEC 60112	V	600.0
CTI performance level category		Sol A		PLC 0
Dielectric strength	1 mm	IEC 60243-1	kV/mm	35.0

Processing conditions

Drying temperature/time	80°C
Suggested max moisture	0.12 %
Rear temperature	285 - 295 °C

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Processing conditions

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.

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.