

TECHNICAL DATA SHEET

TECHNYL PROTECT A 60X1 V25 NC
(Previously TECHNYL A 60X1 V25 NC)

TECHNYL A 60X1 V25 NC is a polyamide 66 based on a non-halogenated flame retardant system, reinforced with 25% of glass fiber, heat stabilized, for injection moulding. This grade offers excellent flame retardancy properties (UL94 V0, UL94 5VA, GWIT) combined with excellent processing, mechanical and electrical performance. The data provided are based on laboratory/experimental results. These data could be adjusted after industrial production.

General

Feature	Halogen and red phosphorus free flame retardant		
Polymer type	PA66 (Polyamide 66)		
Processing technology	Injection molding		
Certification	RoHS EC 1907/2006 (REACH)	UL-Yellow Card	
Applications	Electrical/Electronic Applications		
Colors available	Natural		
Forms	Pellets		

Product identification

ISO 1043 abbreviation	PA66-GF25 FR(40)
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	Condition	Standard	Unit	Value
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Physical properties

Density		ISO 1183	g/cm ³	1.38
Water absorption	24 hr, 23°C	ISO 62	%	1.2
Molding shrinkage, parallel		ISO 294-4, 2577	%	0.3
Molding shrinkage, normal		ISO 294-4, 2577	%	1

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	Condition	Standard	Unit	Value
Mechanical properties				dam / cond.*
Tensile modulus	1 mm/min	ISO 527-1/-2	MPa	9600 / 5900
Stress at break		ISO 527-1/-2	MPa	140 / 88
Strain at break		ISO 527-1/-2	%	2.8 / 5.5
Flexural modulus, ISO 178	2 mm/min	ISO 178	MPa	7700 / 4700
Flexural modulus, ASTM D790	2 mm/min	ASTM D790	MPa	8300 / 5000
Flexural strength, ISO 178	2 mm/min	ISO 178	MPa	220 / 135
Charpy impact strength, +23°C	+23°C	ISO 179/1eU	kJ/m ²	65 / 63
Charpy notched impact strength, +23°C	+23°C	ISO 179/1eA	kJ/m ²	9.5 / 8
Izod notched impact strength, +23°C	+23°C	ISO 180/1A	kJ/m ²	6.8 / 9

Thermal properties

Melting temperature, 10°C/min		ISO 11357-1	°C	258
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	246

Electrical properties

Volume resistivity		IEC 62631-3-1	ohm.m	1E+012
Surface resistivity		IEC 62631-3-1	ohm	1E+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

	Condition	Standard	Unit	Value
Burning behaviour				
UL Yellow Card availability 	Click here to have access to the UL Yellow Card → QMfZ2.E44716			
Flammability, 0.75 mm	0.75 mm	UL 94		V0
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	750
Glow-wire ignition temperature, GWIT, 1.5 mm	1.5 mm	IEC 60695-2-13	°C	775
Glow-wire ignition temperature, GWIT, 3.0 mm	3.0 mm	IEC 60695-2-13	°C	775

*: conditioned according to ISO 1110

Processing conditions

Drying temperature/time	80 °C
Suggested max moisture	0.2 %
Rear temperature	265 - 275 °C
Middle temperature	265 - 275 °C
Front temperature	270 - 280 °C
Recommended mould temperature	60 - 90 °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. The processing parameters like processing temperatures are a recommendation and can be adjusted in function of injection machine size, part geometry / design.

Disclaimer

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