



TECHNICAL DATA SHEET

TECHNYL PROTECT A 60G1 V30 NC

(Previously DOMAMID FR 66G30V0E NC / TECHNYL A 60G1 V30 NATURAL)

Polyamide 66, 30% glass fiber reinforced, halogen and red phosphorus free flame retardant, heat-aging stabilized, for injection moulding

TECHNYL PROTECT A 60G1 V30 NC is a polyamide 66 based on a non-halogenated flame retardant system, reinforced with 30% of glass fiber, heat stabilized, for injection moulding. This grade offers excellent flame retardancy properties (UL 94, 5VA, GWIT) combined with excellent processing, mechanical and electrical performance. It can withstand temperatures of 160°C for over 6000 hours and has a UL F1 rating for weatherability resistance

General

Feature	UL VO Heat-aging stabilized	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	Electrical/Electronic Applications	
Colors available	Natural	Grey	
Forms	Pellets		

Product identification

ISO 1043 abbreviation	PA66-GF30 FR(40)
ISO 16396 designation	PA66,GF30FR(40),M1H,S14-100

Physical properties			
Density	ISO 1183	g/cm³	1.43
Molding shrinkage, parallel	ISO 294-4, 2577	%	0.3 - 0.4
Molding shrinkage, normal	ISO 294-4, 2577	%	0.95 - 1.05





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	Condition			
Mechanical properties				dam / cond.*
ensile modulus	1 mm/min	ISO 527-1/-2	МРа	11000 / -
Stress at break	5 mm/min	ISO 527-1/-2	МРа	160 / -
Strain at break	5 mm/min	ISO 527-1/-2	%	2.6 / -
Charpy impact strength, +23°C	+23°C	ISO 179/1eU	kJ/m²	60 / -
Charpy impact strength, -30°C	-30°C	ISO 179/1eU	kJ/m²	55 / -
Charpy notched impact strength, +23°C	+23°C	ISO 179/1eA	kJ/m²	10.5 / -
Charpy notched impact strength, -30°C	-30°C	ISO 179/1eA	kJ/m²	10 / -
zod impact strength, +23°C	+23°C	ISO 180/1U	kJ/m²	50 / -
Thermal properties				
Melting temperature, 10°C/min		ISO 11357-1	°C	262
Temp. of deflection under load, 1.80 MPa	1.80 MPa	ISO 75	°C	245
Volume resistivity		IEC 62631-3-1	ohm.m	6E+014 2E+015
Volume resistivity		IEC 62631-3-1	ohm.m	6E+014
Comparative tracking index	Solution A	IEC 62831-3-1	V	600
CTI performance level category	Joidholl A	Sol A	V	PLC 0
Dielectric strength	1 mm	IEC 60243-1	kV/mm	38
Burning behaviour JL Yellow Card availability (4)		Click here to have	access to the UL Yellow C	ard → <u>E170540-5631</u>
Flammability, 0.75 mm	0.75 mm	UL 94		VO
Glow-wire flammability index, GWFI, 0.75	0.75 mm	IEC 60695-2-12	°C	960
Glow-wire flammability index, GWFI, 1.5 nm	1.5 mm	IEC 60695-2-12	°C	960
Glow-wire flammability index, GWFI, 3.0 nm	3.0 mm	IEC 60695-2-12	°C	960
Glow-wire ignition temperature, GWIT, 1.75 mm	0.75 mm	IEC 60695-2-13	°C	775
Glow-wire ignition temperature, GWIT, 1.5	1.5 mm	IEC 60695-2-13	°C	850
Glow-wire ignition temperature, GWIT	1-3 mm	IEC 60695-2-13	°C	750
Burning rate, FMVSS, Thickness 1 mm		FMVSS 302		< 100 mm/min

Test run at 23°C if not differently specified, DAM state (dry as moulded), valid for natural colored products.

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Condition Standard Unit Value

Processing conditions

Drying temperature/time	$75-85^{\circ}$ C / 2-4h (with dew point of dried air < -30 $^{\circ}$ C)
Suggested max moisture	0.2 %
Rear temperature	265 - 275 °C
Middle temperature	265 - 275 °C
Front temperature	270 - 280 °C
Recommended melt temperature	265 - 280 °C
Recommended mould temperature	60 - 90 °C

These parameters are typical of the product but should be related to the type of machinery used and to the type of moulded part.

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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^{*:} conditioned according to ISO 1110