TECHNYL® PROTECT
Flame retardants

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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 V0 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	
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

	Condition	Standard	Unit	Value
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	Standard	Unit	Value
Mechanical properties				**dam / cond.***
Tensile modulus	1 mm/min	ISO 527-1/-2	MPa	11000 / -
Stress at break	5 mm/min	ISO 527-1/-2	MPa	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 / -
Izod 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
Electrical properties				
Volume resistivity		IEC 62631-3-1	ohm.m	6E+014
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	38
Burning behaviour				
UL Yellow Card availability	Click here to have access to the UL Yellow Card → E170540-563189			
Flammability, 0.75 mm	0.75 mm	UL 94		V0
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	775
Glow-wire ignition temperature, GWIT, 1.5 mm	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.

	Condition	Standard	Unit	Value

**: conditioned according to ISO 1110*

Processing conditions

Drying temperature/time	75-85°C / 2-4h (with dew point of dried air < -30 °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.

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