TECHNYL® PROTECT
Flame retardants

DOMO
caring is our formula

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)

Physical properties

	Condition	Standard	Unit	Value
Density		ISO 1183	g/cm³	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

TECHNICAL DATA SHEET — **TECHNYL PROTECT A 60X1 V25 NC**

	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/m²	65 / 63
Charpy notched impact strength, +23°C	+23°C	ISO 179/1eA	kJ/m²	9.5 / 8
Izod notched impact strength, +23°C	+23°C	ISO 180/1A	kJ/m²	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

Burning behaviour

	Condition	Standard	Unit	Value
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

The information provided in this documentation corresponds to our technical knowledge at the date of its publication and do not constitute a specification. This information may be subject to revision at our discretion. Domo cannot anticipate all conditions under which this information and our products of other manufactures in combination with our products may be used. Domo accepts no responsibility for results obtained by the application of this information or for the safety and suitability of our products alone or in combination with other products. Users are advised to make their own tests to determine the safety and suitability of each product or product combination for their own purposes. Unless otherwise agreed in writing, Domo sells the product without warranties. Buyers and users assume all responsibility and liability for loss or damage arising from handling and use of our products, whether used alone or in combination with other products. Unless specifically indicated, the grades mentioned are not suitable for applications in the pharmaceutical/medical sector.