TECHNICAL DATA SHEET

TECHNYL PROTECT A 60G1 V25 WT R9003

(Previously TECHNYL A 60G1 V25 WHITE R9003)

TECHNYL PROTECT A 60G1 V25 WT R9003 is a polyamide 66 based on a non-halogenated flame retardant system, reinforced with 25% of glass fiber, heat stabilized, for injection molding. This grade offers excellent flame retardancy properties (UL 94, 5VA, GWIT) combined with excellent processing, mechanical and electrical performance.

General

Feature	Halogen and red phosphorus free flame retardant	UV-laser markable
Polymer type	PA66 (Polyamide 66)	
Processing technology	Injection molding	
Certification	UL-Yellow Card European Railways Certifications EN 45545-2	EC 1907/2006 (REACH)
Applications	Electrical/Electronic Applications	
Colors available	Black Grey	Natural White
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	%	0.7
Water absorption, saturation			%	4.2
Molding shrinkage, parallel		ISO 294-4, 2577	%	0.4
Molding shrinkage, normal		ISO 294-4, 2577	%	1.1

TECHNICAL DATA SHEET — **TECHNYL PROTECT A 60G1 V25 WT R9003**

	Condition	Standard	Unit	Value
Mechanical properties				**dam / cond.***
Tensile modulus	1 mm/min	ISO 527-1/-2	MPa	10000 / 6700
Stress at break		ISO 527-1/-2	MPa	100 / 67
Strain at break		ISO 527-1/-2	%	1.6 / 2.7
Flexural modulus, ISO 178	2 mm/min	ISO 178	MPa	8900 / 6000
Flexural strength, ASTM D790	2 mm/min	ASTM D790	MPa	155 / 115
Charpy impact strength, +23°C	+23°C	ISO 179/1eU	kJ/m²	26 / -
Charpy notched impact strength, +23°C	+23°C	ISO 179/1eA	kJ/m²	3.5 / 4.5
Thermal properties				
Melting temperature, 10°C/min		ISO 11357-1	°C	263
Temp. of deflection under load, 0.45 MPa	0.45 MPa	ISO 75	°C	259
Temp. of deflection under load, 1.80 MPa	1.80 MPa	ISO 75	°C	240
Electrical properties				
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				
UL Yellow Card availability (UL)	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	775
Glow-wire ignition temperature, GWIT, 1.5 mm	1.5 mm	IEC 60695-2-13	°C	775
Oxygen index			%	33

**: 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 - 80 °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