TECHNYL® PROTECT
Flame retardants

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TECHNICAL DATA SHEET

TECHNYL PROTECT C 52G4 MZ25 WT R9003

(Previously TECHNYL C 52G4 MZ25 WHITE R9003)

TECHNYL PROTECT C 52G4 MZ25 WT R9003 is a polyamide 6 based on a non-phosphorous and Non-halogenated flame retardant system, reinforced with 25% of mineral filler, heat stabilized, for injection moulding. This grade offers a robust glow wire resistance, combined with enhanced processing behavior suitable for thin wall parts.

General

Feature	Arc resistant halogen free flame retardant	UV-laser markable
Polymer type	PA6 (Polyamide 6)	
Processing technology	Injection molding	
Certification	EC 1907/2006 (REACH) NF F 16-101	European Railways Certifications EN 45545-2
Applications	Electrical/Electronic Applications	
Colors available	Grey	White
Forms	Pellets	

Product identification

ISO 1043 abbreviation	PA6-MD25 FR(30)

Physical properties

	Condition	Standard	Unit	Value
Density		ISO 1183	g/cm³	1.37
Water absorption	24 hr, 23°C	ISO 62	%	1
Water absorption, saturation			%	6
Molding shrinkage, parallel		ISO 294-4, 2577	%	0.6
Molding shrinkage, normal		ISO 294-4, 2577	%	0.8

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	Condition	Standard	Unit	Value
Mechanical properties				**dam / cond.***
Tensile modulus	1 mm/min	ISO 527-1/-2	MPa	6900 / 2400
Stress at break		ISO 527-1/-2	MPa	75 / 35
Strain at break		ISO 527-1/-2	%	3 / -
Flexural modulus, ISO 178	2 mm/min	ISO 178	MPa	6300 / 2500
Flexural modulus, ASTM D790	2 mm/min	ASTM D790	MPa	6000 / -
Flexural strength, ISO 178	2 mm/min	ISO 178	MPa	125 / 50
Flexural strength, ASTM D790	2 mm/min	ASTM D790	MPa	120 / -
Charpy impact strength, +23°C	+23°C	ISO 179/1eU	kJ/m²	35 / 80
Charpy impact strength, -30°C	-30°C	ISO 179/1eU	kJ/m²	45 / -
Charpy notched impact strength, +23°C	+23°C	ISO 179/1eA	kJ/m²	3 / 4.5
Charpy notched impact strength, -30°C	-30°C	ISO 179/1eA	kJ/m²	2.5 / -
Izod notched impact strength, +23°C	+23°C	ISO 180/1A	kJ/m²	2 / -
Thermal properties				
Melting temperature, 10°C/min		ISO 11357-1	°C	222
Temp. of deflection under load, 0.45 MPa	0.45 MPa	ISO 75	°C	200
Temp. of deflection under load, 1.80 MPa	1.80 MPa	ISO 75	°C	130
Electrical properties				
Comparative tracking index	Solution A	IEC 60112	V	525
CTI performance level category		Sol A		PLC 1
Dielectric strength	1 mm	IEC 60243-1	kV/mm	35
Burning behaviour				
Flammability, 0.75 mm	0.75 mm	UL 94		V2
Flammability, 1.5 mm	1.5 mm	UL 94		V2
Flammability, 3.0 mm	3.0 mm	UL 94		V2

**: conditioned according to ISO 1110*

Processing conditions

Drying temperature/time	80 °C
Suggested max moisture	0.2 %
Rear temperature	230 - 235 °C
Middle temperature	235 - 240 °C
Front temperature	240 - 250 °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.

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