

TECHNICAL DATA SHEET

TECHNYL STAR AFX 60G1 V45 GY 2633

TECHNYL STAR AFX 60G1 V45 Grey 2633 is a high flow polyamide 66 based on a non-halogenated flame retardant system, reinforced of 45% of glass fiber, heat stabilized, for injection moulding. This grade offers excellent electrical properties combined with flame retardancy performance

General

Feature	Halogen and red phosphorus free flame retardant Excellent surface finish	Very high flow High stiffness
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	Grey	Blue
Forms	Pellets	

Product identification

ISO 1043 abbreviation	PA66-GF45 FR(40)
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	Condition	Standard	Unit	Value
Physical properties				
Density		ISO 1183	g/cm³	1.57
Water absorption	24 hr, 23°C	ISO 62	%	0.6
Molding shrinkage, parallel		ISO 294-4, 2577	%	0.35
Molding shrinkage, normal		ISO 294-4, 2577	%	0.65

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	Condition	Standard	Unit	Value
Mechanical properties				dam / cond.*
Tensile modulus	1 mm/min	ISO 527-1/-2	MPa	15500 / 11400
Stress at break		ISO 527-1/-2	MPa	160 / 115
Strain at break		ISO 527-1/-2	%	1.7 / 2.1
Flexural modulus, ISO 178	2 mm/min	ISO 178	MPa	13400 / 10900
Flexural strength, ISO 178	2 mm/min	ISO 178	MPa	290 / 210
Charpy impact strength, +23°C	+23°C	ISO 179/1eU	kJ/m²	55 / -
Charpy notched impact strength, +23°C	+23°C	ISO 179/1eA	kJ/m²	9.7 / 11
Izod impact strength, +23°C	+23°C	ISO 180/1U	kJ/m²	53 / 53
Izod notched impact strength, +23°C	+23°C	ISO 180/1A	kJ/m²	8 / 10

Thermal properties

Melting temperature, 10°C/min		ISO 11357-1	°C	263
Temp. of deflection under load, 1.80 MPa	1.80 MPa	ISO 75	°C	250
Thermal conductivity, through plane		ASTM E1461	W/m.K	0.4
Thermal conductivity, in plane		ASTM E1461	W/m.K	0.4

Electrical properties

Volume resistivity		IEC 62631-3-1	ohm.m	1E+013
Surface resistivity		IEC 62631-3-1	ohm	7E+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	44

Burning behaviour

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		V0
Flammability, 3.0 mm	3.0 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
Oxygen index			%	34

*: conditioned according to ISO 1110

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Processing conditions

Drying temperature/time	80 °C
Suggested max moisture	0.2 %
Rear temperature	260 - 270 °C
Middle temperature	265 - 275 °C
Front temperature	265 - 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

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