TECHNYL STAR®
High-flow PA6 & PA 6.6

caring is our formula

TECHNICAL DATA SHEET

TECHNYL STAR S 60X1 V30 GY R7011

TECHNYL STAR S 60X1 V30 GY R7011 is a grade based on a non-halogenated flame retardant system and on a patented high flow polyamide 6 resin (TechnylStar), reinforced of 30% of glass fiber, heat stabilized, for injection moulding. This grade is heat stabilized and provides optimized injection moulding performance.

General

Feature	Halogen and red phosphorus free flame retardant Very high flow Excellent surface finish	Arc resistant Corrosion resistant Low temperature impact resistant
Polymer type	PA6 (Polyamide 6)	
Processing technology	Injection molding	
Certification	RoHS EC 1907/2006 (REACH)	UL-Yellow Card European Railways Certifications EN 45545-2
Applications	Connectors	Electrical/Electronic Applications
Colors available	Black Grey	Natural
Forms	Pellets	

Product identification

ISO 1043 abbreviation	PA6-GF30 FR(40)
ISO 16396 designation	PA6,GF30FR(40)0,M1,S14-110

Physical properties

	Condition	Standard	Unit	Value
Density		ISO 1183	g/cm³	1.42
Water absorption	24 hr, 23°C	ISO 62	%	0.85 - 0.95
Water absorption, saturation			%	4.2

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	Condition	Standard	Unit	Value
Mechanical properties				**dam / cond.***
Tensile modulus	1 mm/min	ISO 527-1/-2	MPa	10300 / 7000
Stress at break		ISO 527-1/-2	MPa	130 / 80
Strain at break		ISO 527-1/-2	%	2.1 / 3
Flexural modulus, ISO 178	2 mm/min	ISO 178	MPa	9000 / 5850
Flexural strength, ISO 178	2 mm/min	ISO 178	MPa	195 / 130
Charpy impact strength, +23°C	+23°C	ISO 179/1eU	kJ/m²	40 / 35
Charpy impact strength, -30°C	-30°C	ISO 179/1eU	kJ/m²	25 / -
Charpy notched impact strength, +23°C	+23°C	ISO 179/1eA	kJ/m²	7 / 9
Charpy notched impact strength, -30°C	-30°C	ISO 179/1eA	kJ/m²	6 / -
Izod impact strength, +23°C	+23°C	ISO 180/1U	kJ/m²	32 / 40
Izod notched impact strength, +23°C	+23°C	ISO 180/1A	kJ/m²	7 / 8.5
Thermal properties				
Melting temperature, 10°C/min		ISO 11357-1	°C	222
Temp. of deflection under load, 1.80 MPa	1.80 MPa	ISO 75	°C	205
Electrical properties				
Volume resistivity		IEC 62631-3-1	ohm.m	1E+013
Surface resistivity		IEC 62631-3-1	ohm	6E+014
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	25

	Condition	Standard	Unit	Value
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
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	800
Glow-wire ignition temperature, GWIT, 3.0 mm	3.0 mm	IEC 60695-2-13	°C	825
Oxygen index			%	35

**: conditioned according to ISO 1110*

Processing conditions

Drying temperature/time	80 °C
Suggested max moisture	0.1 %
Rear temperature	240 - 245 °C
Middle temperature	245 - 255 °C
Front temperature	255 - 260 °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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