

TECHNICAL DATA SHEET

TECHNYL STAR SX 218 V50 BK Z

TECHNYL STAR SX 218 V50 BK Z is based on a patented high flow polyamide 6 resin (Technylstar), heat stabilized, reinforced with 50% of glass fibre, for injection moulding. Due to its outstanding flow characteristics, this grade allows more freedom in mould and part design versus a standard polyamide solutions.

General

Feature	Heat-aging stabilized Very high flow High stiffness	High dimensional stability Excellent surface finish
Polymer type	PA6 (Polyamide 6)	
Processing technology	Injection molding	
Certification	RoHS EC 1907/2006 (REACH)	UL-Yellow Card
Applications	Automotive Applications Power Tool & Garden Equipment Sport	Electrical/Electronic Applications Pulleys
Colors available	Black	
Forms	Pellets	

Product identification

ISO 1043 abbreviation	PA6-GF50
ISO 16396 designation	PA6,GF50,M1,S14-190

Condition	Standard	Unit	Value
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Physical properties

	Condition	Standard	Unit	Value
Density		ISO 1183	g/cm ³	1.56
Humidity absorption	T=23°C, 50% RH	ISO 62	%	1.4
Water absorption	24 hr, 23°C	ISO 62	%	0.6 - 0.65
Water absorption, saturation			%	2.7
Molding shrinkage, parallel		ISO 294-4, 2577	%	0.25 - 0.35
Molding shrinkage, normal		ISO 294-4, 2577	%	0.4 - 0.5

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	Condition	Standard	Unit	Value
Mechanical properties				dam / cond.*
Tensile modulus	1 mm/min	ISO 527-1/-2	MPa	17500 / 11000
Stress at break		ISO 527-1/-2	MPa	240 / 150
Strain at break		ISO 527-1/-2	%	2.3 / 3.5
Flexural modulus, ISO 178	2 mm/min	ISO 178	MPa	15000 / 9300
Flexural strength, ISO 178	2 mm/min	ISO 178	MPa	350 / 220
Charpy impact strength, +23°C	+23°C	ISO 179/1eU	kJ/m ²	90 / 95
Charpy impact strength, -30°C	-30°C	ISO 179/1eU	kJ/m ²	75 / -
Charpy notched impact strength, +23°C	+23°C	ISO 179/1eA	kJ/m ²	16 / 20
Charpy notched impact strength, -30°C	-30°C	ISO 179/1eA	kJ/m ²	15.5 / -
Izod impact strength, +23°C	+23°C	ISO 180/1U	kJ/m ²	85 / 90
Izod notched impact strength, +23°C	+23°C	ISO 180/1A	kJ/m ²	16 / 21


Thermal properties

Melting temperature, 10°C/min		ISO 11357-1	°C	220
Temp. of deflection under load, 1.80 MPa	1.80 MPa	ISO 75	°C	210

Electrical properties

Volume resistivity		IEC 62631-3-1	ohm.m	2E+015
Surface resistivity		IEC 62631-3-1	ohm	2E+014
Comparative tracking index	Solution A	IEC 60112	V	650
CTI performance level category		Sol A		PLC 0
Dielectric strength	1 mm	IEC 60243-1	kV/mm	20

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		HB
Flammability, 3.0 mm	3.0 mm	UL 94		HB
Burning rate, FMVSS, Thickness 1 mm		FMVSS 302		<100

*: conditioned according to ISO 1110

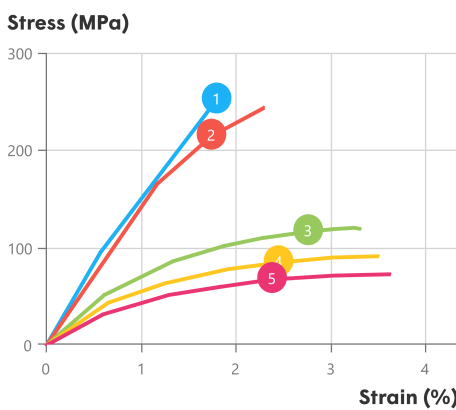
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Processing conditions

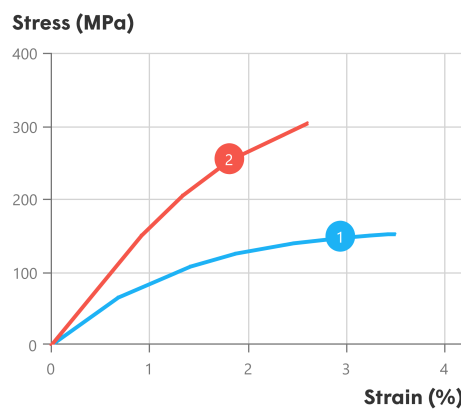
Drying temperature/time	80 °C
Suggested max moisture	0.2 %
Rear temperature	230 - 235 °C
Middle temperature	235 - 245 °C
Front temperature	245 - 250 °C
Recommended mould temperature	60 - 90 °C

Stress-strain, dry



Temperature (°C)	
1	Spannung 1
2	Spannung 2
3	Spannung 3
4	Spannung 4
5	Spannung 5

Stress-strain, conditioned



Temperature (°C)	
1	Spannung 1
2	Spannung 3

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

For reinforced polyamides, Domo recommends the use of steel with a high content of carbon, and purified for polishing, to avoid or limit the abrasion. For example: X38CrMoV5-1 (EN Norm) - 1.2367 / 1.2343 (DIN Norm) or X160CrMoV12 (EN Norm) - 1.2601 / 1.2379 (DIN Norm). 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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