

# TECHNYL STAR®

## TECHNYL STAR® SX 218 V60 BLACK Z

TECHNICAL DATA SHEET

Revised: August, 2017

TECHNYL STAR® SX 218 V60 Black Z is based on a patented high flow polyamide 6 resin (Technylstar), heat stabilized, reinforced with 60% 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

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific	• Europe • North America
Filler / Reinforcement	• Glass Fiber, 60% Filler by Weight	
Additive	• Heat Stabilizer	
Key Benefits	• Good Dimensional Stability • High Flow • Heat Stabilized (Inorganic)	• High Stiffness • Superior Surface Finish
Applications	• Automotive applications • Brackets • Door handles • Electric boxes • Fixation for Photovoltaic	• Motor pulleys • Outdoors activities • Pedals • Sports equipment • Structural parts
Certification/Compliance	• EC 1907/2006 (REACH)	• UL QMFZ2
RoHS Compliance	• RoHS Compliant	
Colors Available	• Black	
Forms	• Pellets	
Processing Method	• Injection Molding	• MuCell® Injection Molding
Resin ID (ISO 1043)	• PA6-GF60	

### PROPERTIES

Typical values of properties are for Black grades

Physical	Dry	Conditioned	Unit	Test Method
Molding Shrinkage				ISO 294-4
Across Flow	0.40		%	
Flow	0.30		%	
Water Absorption				ISO 62
24 hr, 23°C	0.55		%	
Equilibrium, 23°C, 50% RH	1.0		%	
Density	1.65		g/cm <sup>3</sup>	ISO 1183/A



Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	21000	13500	MPa	ISO 527-2/1A
Tensile Stress (Break, 23°C)	240	165	MPa	ISO 527-2/1A
Tensile Strain (Break, 23°C)	2.3	3.4	%	ISO 527-2
Flexural Modulus (23°C)	19500	14000	MPa	ISO 178
Flexural Stress (23°C)	380	280	MPa	ISO 178
Charpy Notched Impact Strength (23°C)	15	20	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	85	95	kJ/m <sup>2</sup>	ISO 179/1eU
Notched Izod Impact Strength (23°C)	15	22	kJ/m <sup>2</sup>	ISO 180
Unnotched Izod Impact Strength (23°C)	90	100	kJ/m <sup>2</sup>	ISO 180/1U

Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature 1.8 MPa, Unannealed	215		°C	ISO 75-2/1A
Melting Temperature	222		°C	ISO 11357-3

Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating (1.6 mm)	HB			UL 94

## PROCESSING

Injection	Dry	Unit
Drying Temperature	80	°C
Suggested Max Moisture	0.20	%
Rear Temperature	230 to 235	°C
Middle Temperature	235 to 245	°C
Front Temperature	245 to 250	°C
Mold Temperature	60 to 90	°C

### Injection Notes

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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 mini -20°C. Recommended time 2-4h

#### Injection Advice:

- For reinforced polyamides, Solvay 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
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### DISCLAIMER

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The information contained in this document is given in good faith based on our current knowledge. It is only an indication and it is in no way binding. This information must on no account be used as a substitutive for necessary prior tests which alone can ensure that a product is suitable for a given use. ANY WARRANTY OF PRODUCT PERFORMANCE, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS EXPRESSLY EXCLUDED. Users are responsible for ensuring compliance with local legislation and for obtaining the necessary certifications and authorizations. Users are requested to check that they are in possession of the latest version of this document, and Solvay is at their disposal to supply any additional information.



## SAFETY INFORMATION

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Detailed information regarding safety are available on the safety data sheet (SDS). SDS is sent with the first material order or available by contacting our customer services

## REGULATIONS COMPLIANCE

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This product is not intended to be used for the following regulated market: food contact, drinking water, toys, cosmetics or medical devices.

This grade complies with ROHS Directive 2011/65/EU and 2015/863 as amended.

Grades produced or imported in Europe comply with REACH directive 1907/2006/EC as amended.

## CUSTOMER SERVICES

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Our customer services are not only concerned with manufacturing and supply of Engineering Plastics products. We are available to assist our customers in finding technical solutions that meet their requirements. Specific support is in particular offered on:

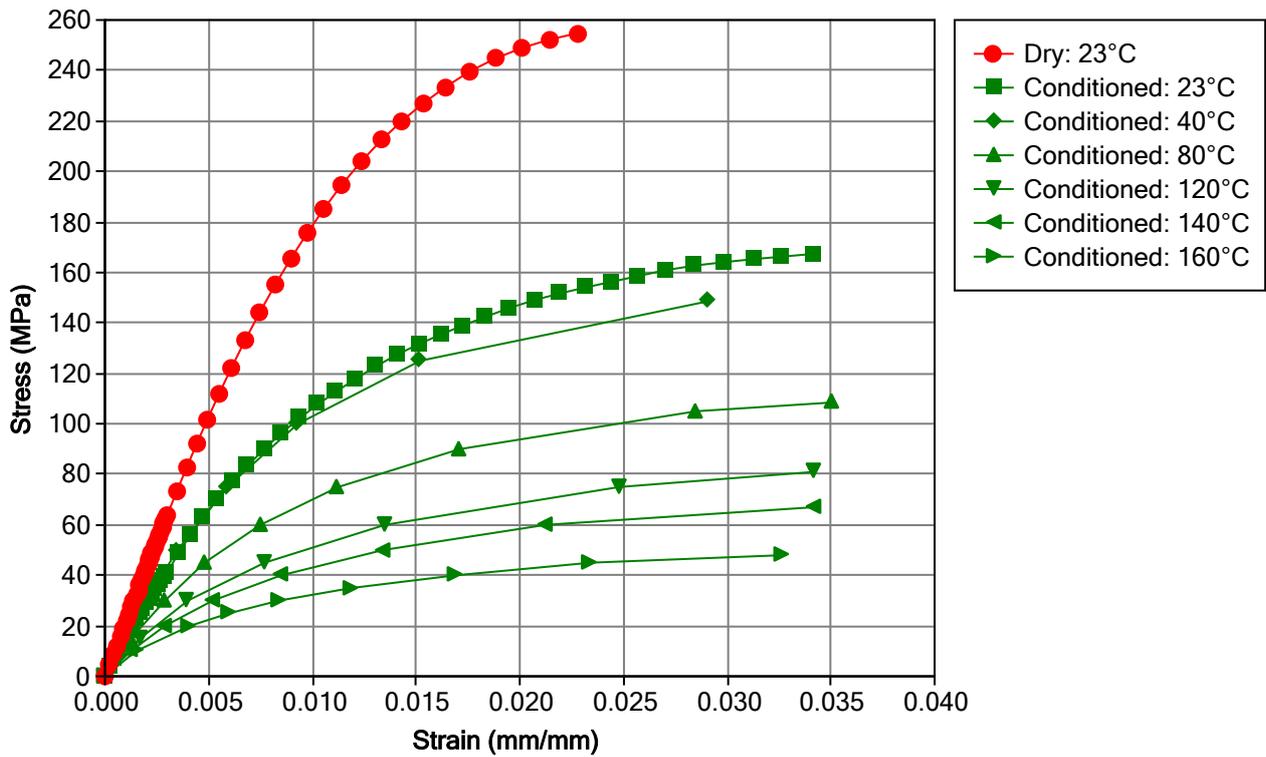
- Material selection
- Material testing
- Parts design advice, training for design engineers
- Part testing
- Design simulation
- Processing through different technologies
- Assembly and post-processing technology expertise
- Parts optimization through Computer Aided Design

You can find more information on Solvay Product range on our internet product finder at the following address: <http://www.technyl.com>



MULTIPOINT DATA

Isothermal Stress vs. Strain (ISO 11403-1)



**Notes**

Typical properties: these are not to be construed as specifications.

