

TECHNYL STAR® S 218 MT40 NATURAL

TECHNICAL DATA SHEET

Revised: May, 2017

TECHNYL STAR® S 218 MT40 Natural is based on a patented high flow polyamide 6 resin (TechnylStar), reinforced with 40% mineral filler, heat stabilized, for injection moulding. This grade offers good mechanical properties and is characterized by a high fluidity of the melt.

GENERAL

Material Status	• Commercial: Active	
Availability	• Africa & Middle East	• Europe
Filler / Reinforcement	• Mineral, 40% Filler by Weight	
Additive	• Heat Stabilizer	
Key Benefits	• Heat Stabilized (Inorganic) • Superior Surface Finish	• Low Warpage
Applications	• Automotive applications • Fans and shrouds	• Handles
Certification/Compliance	• EC 1907/2006 (REACH)	
RoHS Compliance	• RoHS Compliant	
Automotive Specifications	• PSA Peugeot-Citroën SPA X62 3849	
Colors Available	• Natural Color	
Forms	• Pellets	
Processing Method	• Injection Molding	
Resin ID (ISO 1043)	• PA6-MD40	

PROPERTIES

Typical values of properties are for Natural grades

Physical	Dry	Conditioned	Unit	Test Method
Molding Shrinkage				ISO 294-4
Across Flow	0.90		%	
Flow	0.60		%	
Water Absorption (24 hr, 23°C)	0.72		%	ISO 62
Density	1.45		g/cm³	ISO 1183/A
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	6000	2400	MPa	ISO 527-2/1A
Tensile Strength				
Yield, 23°C	75	55	MPa	ASTM D638
Break, 23°C	7	22	MPa	ASTM D638
Break, 23°C	90	55	MPa	ISO 527-2/1A
Tensile Strain (Break, 23°C)	8.0	34	%	ISO 527-2
Flexural Modulus (23°C)	5500	1850	MPa	ISO 178
Flexural Stress (23°C)	150	65.0	MPa	ISO 178

Mechanical	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength (23°C)	5.0	9.0	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength				
23°C	120	100	kJ/m²	ISO 179/1eU
23°C	150	330	kJ/m²	ISO 179/1fU
Notched Izod Impact Strength (23°C)	5.0	8.0	kJ/m²	ISO 180
Unnotched Izod Impact (Area) (23°C)	100	245	kJ/m²	ASTM D256
Unnotched Izod Impact Strength (23°C)	100	200	kJ/m²	ISO 180/1U
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, Unannealed	186		°C	ISO 75-2/Bf
1.8 MPa, Unannealed	90		°C	ISO 75-2/Af
Melting Temperature	221		°C	ISO 11357-3
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.8 mm	HB			
1.6 mm	HB			
3.2 mm	HB			

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

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

DISCLAIMER

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

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

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

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

MULTIPOINT DATA

Isothermal Stress vs. Strain (ISO 11403-1)

