

TECHNYL STAR®

TECHNYL STAR® S 216 V30 NATURAL

TECHNICAL DATA SHEET

Revised: September, 2017

TECHNYL STAR® S 216 V30 Natural is based on a patented high flow polyamide 6 resin (TechnylStar), reinforced with 30% of glass fibre, for injection moulding. Due to its outstanding flow characteristics, this grade provides a significant productivity improvement and allows more freedom in mould and part design versus a standard polyamide solutions.

GENERAL

Material Status	• Commercial: Active
Availability	• Africa & Middle East • Europe • North America
Filler / Reinforcement	• Glass Fiber, 30% Filler by Weight
Key Benefits	• High Flow • Good Mold Release • Superior Surface Finish
Applications	• Consumer and Industrial applications • Furnitures • General purpose • Outdoors activities • Power tools • Structural parts
Certification/Compliance	• EC 1907/2006 (REACH) • UL QMFZ2
RoHS Compliance	• RoHS Compliant
Automotive Specifications	• IMDS ID 16973533/2
Colors Available	• Black • Natural Color
Forms	• Pellets
Processing Method	• Injection Molding
Resin ID (ISO 1043)	• PA6-GF30

PROPERTIES

Typical values of properties are for Natural grades

Physical	Dry	Conditioned	Unit	Test Method
Molding Shrinkage				ISO 294-4
Across Flow	0.75		%	
Flow	0.20		%	
Water Absorption (24 hr, 23°C)	0.95		%	ISO 62
Density	1.34		g/cm ³	ISO 1183/A
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	9600	6200	MPa	ISO 527-2/1A
Tensile Stress (Break, 23°C)	180	110	MPa	ISO 527-2/1A
Tensile Strain (Break, 23°C)	3.3		%	ISO 527-2
Flexural Modulus (23°C)	9300	5200	MPa	ISO 178
Flexural Stress (23°C)	255		MPa	ISO 178
Charpy Notched Impact Strength (23°C)	10	14	kJ/m ²	ISO 179/1eA



Mechanical	Dry	Conditioned	Unit	Test Method
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	50		kJ/m ²	
23°C	81		90 kJ/m ²	
Notched Izod Impact Strength (23°C)	12		19 kJ/m ²	ISO 180
Unnotched Izod Impact Strength (23°C)	82		65 kJ/m ²	ISO 180/1U
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				ISO 75-2/Af
1.8 MPa, Unannealed	204		°C	
Melting Temperature	222		°C	ISO 11357-3
Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	1.0E+14		1.0E+12 ohms	IEC 60093
Volume Resistivity	1.0E+15		1.0E+13 ohms-cm	IEC 60093
Electric Strength (2.00 mm)			22 kV/mm	IEC 60243-1
Relative Permittivity	3.80		4.50	IEC 60250
Dissipation Factor	0.020		0.090	IEC 60250
Comparative Tracking Index (Solution A)	550		475 V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
1.6 mm	HB			
3.2 mm	HB			
Glow Wire Flammability Index (1.6 mm)	650		°C	IEC 60695-2-12
Oxygen Index	22		%	ISO 4589-2

PROCESSING

Injection	Dry	Unit
Drying Temperature		80 °C
Suggested Max Moisture		0.20 %
Rear Temperature		230 to 235 °C
Middle Temperature		235 to 240 °C
Front Temperature		240 to 245 °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
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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:

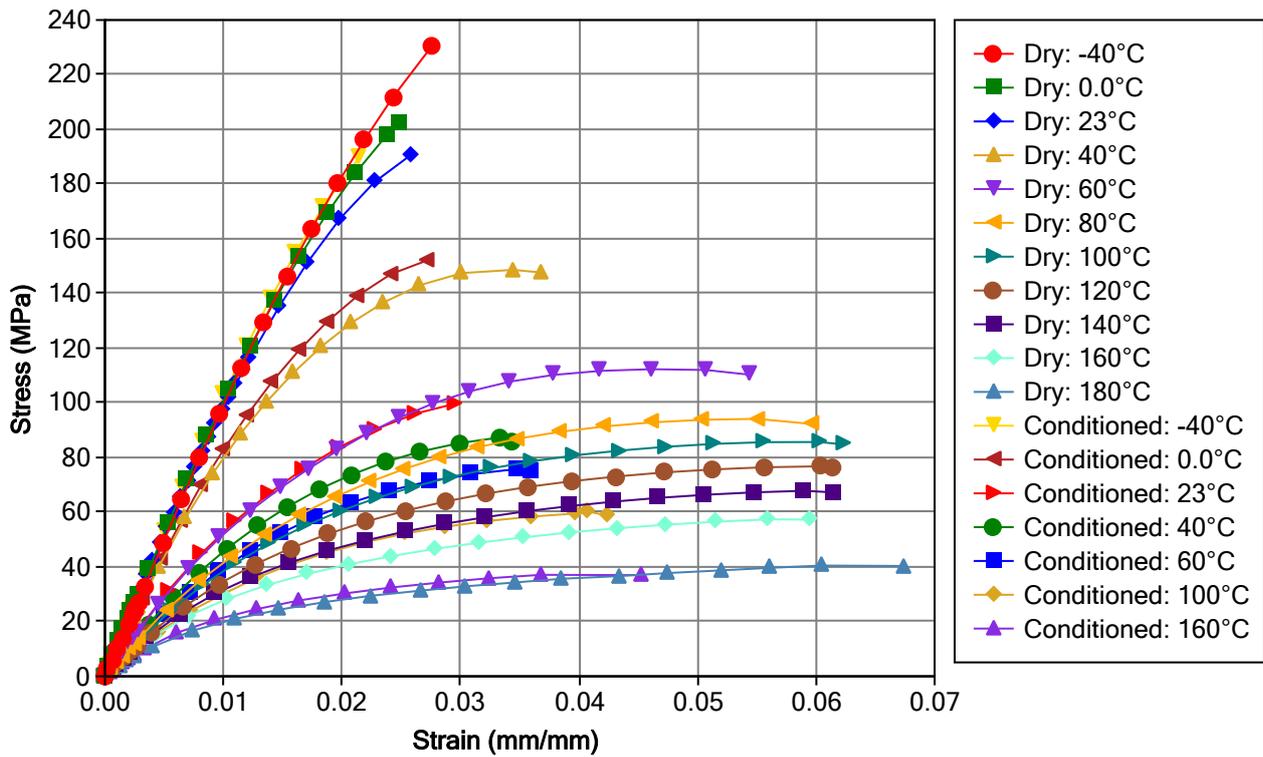
- Material selection
- Material testing
- Parts design advice, training for design engineers
- Part testing
- Design simulation
- Processing through different technologies
- Assembly and post-processing technology expertise
- Parts optimization through Computer Aided Design

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.

