TECHNYL STAR® AFX 218 V60 BLACK 31N

TECHNICAL DATA SHEET

Revised: December, 2018

TECHNYL STAR® AFX 218 V60 Black 31N is a high flow polyamide 66 resin, reinforced with 60% of glass fibre, heat stabilized, for injection moulding. Due to its outstanding flow caracteristics, this grade shows exceptional processing behaviour and excellent surface aspect of the finished part.

GENERAL

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • 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 • Consumer and Industrial applications • Door handles	• Door lock mechanism • Interior trims and switches • Pedals • Structural parts
Certification/Compliance	• EC 1907/2006 (REACH)	• UL QMFZ2
RoHS Compliance	• RoHS Compliant	
Colors Available	• Black	• Natural Color
Forms	• Pellets	
Processing Method	• Injection Molding	
Resin ID (ISO 1043)	• PA66-GF60	

PROPERTIES

Typical values of properties are for Black grades

Physical	Dry	Conditioned	Unit	Test Method
Molding Shrinkage				ISO 294-4
Across Flow	0.55		%	
Flow	0.35		%	
Water Absorption				ISO 62
24 hr, 23°C	0.60		%	
Equilibrium, 23°C, 50% RH	1.2		%	
Density	1.69		g/cm³	ISO 1183/A

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Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	22000	16500	MPa	ISO 527-2/1A
Tensile Stress (Break, 23°C)	270	195	MPa	ISO 527-2/1A
Tensile Elongation (Break, 23°C)	2.1	3.1	%	ASTM D638 ISO 527-2
Flexural Modulus (23°C)	20000	15000	MPa	ISO 178
Flexural Stress (23°C)	410	300	MPa	ISO 178
Charpy Notched Impact Strength (23°C)	17	18	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	95	90	kJ/m²	ISO 179/1eU
Notched Izod Impact Strength (23°C)	17	20	kJ/m²	ISO 180
Unnotched Izod Impact Strength (23°C)	94	92	kJ/m²	ISO 180/1U

Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				ISO 75-2/Af
1.8 MPa, Unannealed	255		°C	
Melting Temperature	262		°C	ISO 11357-3
CLTE				ISO 11359-2
Flow : 23 to 55°C	1.5E-5		cm/cm/°C	
Flow : 70 to 150°C	1.2E-5		cm/cm/°C	
Transverse : 23 to 55°C	6.0E-5		cm/cm/°C	
Transverse : 70 to 150°C	1.1E-4		cm/cm/°C	

Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity (0.800 mm)	1.0E+13		ohms	IEC 60093
Volume Resistivity (0.800 mm)	1.0E+14		ohms·cm	IEC 60093
Electric Strength (0.800 mm)	40		kV/mm	IEC 60243-1
Comparative Tracking Index (Solution A)	550		V	IEC 60112

PROCESSING

Injection	Dry	Unit
Drying Temperature	80	°C
Suggested Max Moisture	0.20	%
Rear Temperature	265 to 275	°C
Middle Temperature	270 to 280	°C
Front Temperature	280 to 290	°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

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

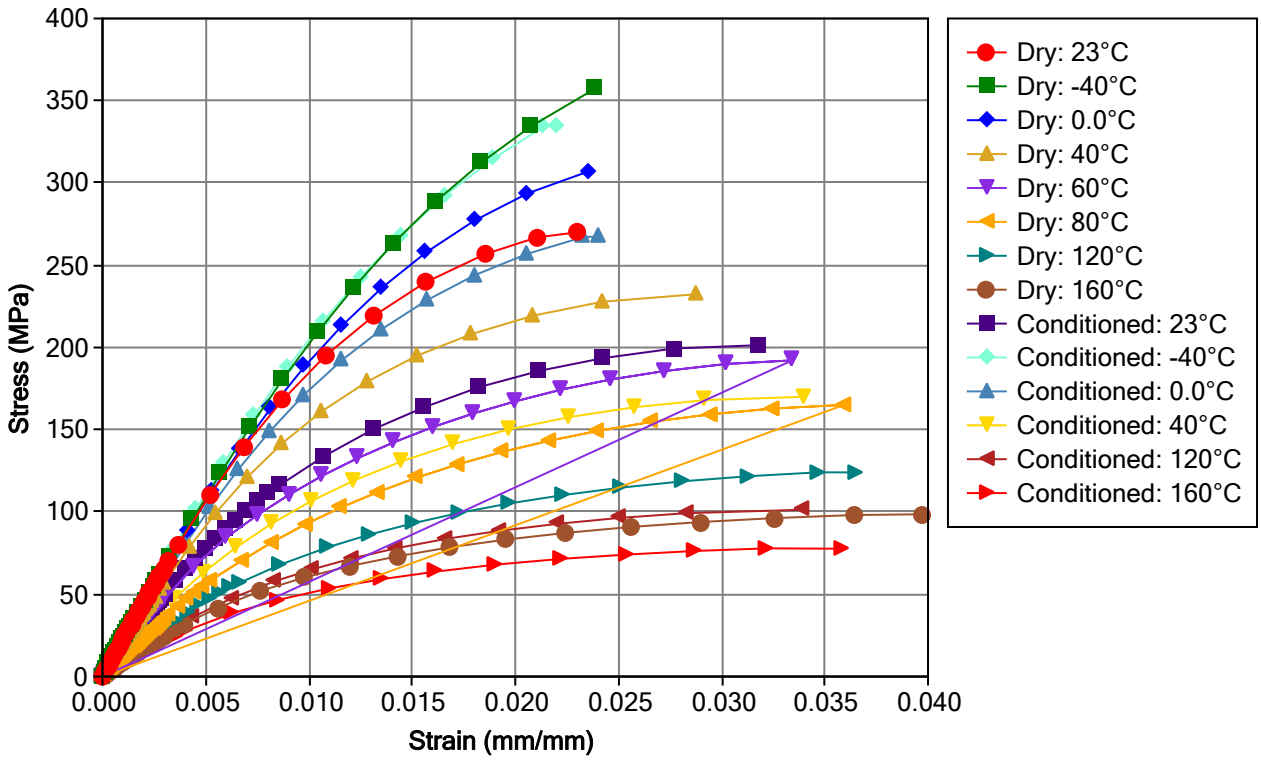
Our customer services are not only concerned with manufacturing and supply of Engineering Plastics products. We are available to assist our customers in finding technical solutions that meet their requirements. Specific support is in particular offered on:

- 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.

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