

TECHNYL STAR® AFX 218 V50 BLACK 31N

TECHNICAL DATA SHEET

Revised: June, 2017

TECHNYL STAR® AFX 218 V50 Black 31N is a high flow polyamide 66 resin, reinforced with 50% of glass fibre, heat stabilized, for injection moulding. Due to its outstanding flow characteristics, 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, 50% Filler by Weight	
Additive	• Heat Stabilizer	
Key Benefits	• Good Dimensional Stability • High Flow • Heat Stabilized (Inorganic)	• High Stiffness • Superior Surface Finish
Applications	• Anti-foaming plate • Automotive applications • External rear mirror bracket	• Gear wheels • Hinges • Interior trims and switches
Certification/Compliance	• EC 1907/2006 (REACH)	
RoHS Compliance	• RoHS Compliant	
Colors Available	• Black	
Forms	• Pellets	
Processing Method	• Injection Molding	
Resin ID (ISO 1043)	• PA66-GF50	

PROPERTIES

Typical values of properties are for Black grades

Physical	Dry	Conditioned	Unit	Test Method
Molding Shrinkage				ISO 294-4
Across Flow	0.65		%	
Flow	0.30		%	
Water Absorption				ISO 62
24 hr, 23°C	0.60		%	
Equilibrium, 23°C, 50% RH	1.3		%	
Density	1.55		g/cm³	ISO 1183/A

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	17000	12500	MPa	ISO 527-2/1A
Tensile Stress (Break, 23°C)	255	180	MPa	ISO 527-2/1A
Tensile Strain (Break, 23°C)	2.5	3.5	%	ISO 527-2
Flexural Modulus (23°C)	14000		MPa	ISO 178
Flexural Stress (23°C)	380		MPa	ISO 178
Charpy Notched Impact Strength (23°C)	15	21	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	100	100	kJ/m²	ISO 179/1eU
Notched Izod Impact Strength (23°C)	17	21	kJ/m²	ISO 180
Unnotched Izod Impact Strength (23°C)	88	91	kJ/m²	ISO 180/1U
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature 1.8 MPa, Unannealed	256		°C	ISO 75-2/Af
Melting Temperature	262		°C	ISO 11357-3
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating (0.8 mm)	HB			UL 94
Glow Wire Flammability Index (0.8 mm)	650		°C	IEC 60695-2-12
Glow Wire Ignition Temperature (0.8 mm)	675		°C	IEC 60695-2-13

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

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)

