TECHNYL eXten® D 218CR V33 BLACK

TECHNICAL DATA SHEET

Revised: December, 2018

TECHNYL eXten® D 218CR V33 Black is a glass fiber reinforced grade based on polyamide blend of polyamide 6.10 and polyamide 66, heat stabilized, for injection moulding. This grade shows outstanding resistance to hydrolysis and chemical resistance to long life automotive coolants. It also offers an excellent crack resistance to calcium chloride road salts, good injection process ability, high surface aspect quality, and high overall mechanical and thermal properties.

GENERAL

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Filler / Reinforcement	• Glass Fiber, 33% Filler by Weight	
Additive	• Hydrolysis Resistant	
Key Benefits	• Partially Bio-based • High Chemical Resistance • Good Dimensional Stability • Good Flow • Very High Glycol Resistance • Heat Stabilized (Inorganic)	• Hydrolysis Resistant • Low Moisture Absorption • High Road Salt Resistance • Good Surface Finish • Weldable
Applications	• Automotive applications • Cooling circuit component	• Radiator end tanks • Thermostat housings
Certification/Compliance	• EC 1907/2006 (REACH)	
RoHS Compliance	• RoHS Compliant	
Colors Available	• Black	
Forms	• Pellets	
Processing Method	• Injection Molding	
Resin ID (ISO 1043)	• PA610+PA66-GF33	

PROPERTIES

Typical values of properties are for Black grades

Physical	Dry	Conditioned	Unit	Test Method
Molding Shrinkage				ISO 294-4
Across Flow	0.90		%	
Flow	0.30		%	
Water Absorption				
24 hr, 23°C	0.30		%	ISO 62
Saturation, 23°C	3.6		%	ISO 62
Equilibrium, 23°C, 50% RH	1.3		%	ISO 1110
Density	1.35		g/cm³	ISO 1183/A

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Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	11300	8900	MPa	ISO 527-2/1A
Tensile Stress (Break, 23°C)	196	132	MPa	ISO 527-2/1A
Tensile Strain (Break, 23°C)	3.3	4.8	%	ISO 527-2
Flexural Modulus (23°C)	10200	8000	MPa	ISO 178
Flexural Stress (23°C)	280	220	MPa	ISO 178
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	10		kJ/m²	
23°C	15	13	kJ/m²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	70		kJ/m²	
23°C	94		kJ/m²	

Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, Unannealed	225		°C	ISO 75-2/Bf
1.8 MPa, Unannealed	218		°C	ISO 75-2/Af
Melting Temperature	220 to 260		°C	ISO 11357-3

Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity	1.0E+15		ohms·cm	IEC 60093
Electric Strength (2.00 mm)	34		kV/mm	IEC 60243-1
Comparative Tracking Index (Solution B)	600		V	IEC 60112

Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating (0.40 mm)	HB			UL 94

PROCESSING

Injection	Dry	Unit
Drying Temperature	80	°C
Drying Time	2.0 to 4.0	hr
Suggested Max Moisture	0.20	%
Rear Temperature	265 to 275	°C
Middle Temperature	270 to 280	°C
Front Temperature	275 to 285	°C
Mold Temperature	70 to 100	°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

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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

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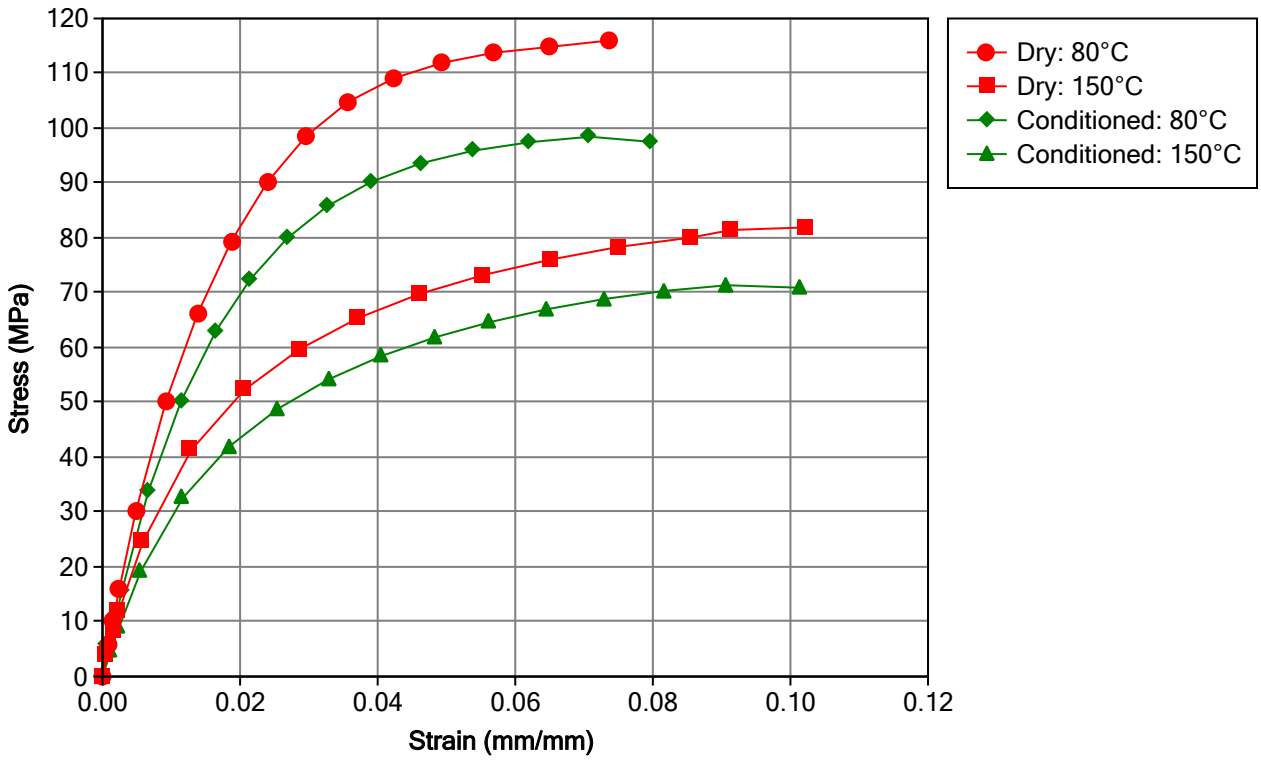
MULTIPOINT DATA

Isothermal Stress vs. Strain (ISO 11403-1)



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Viscosity vs. Shear Rate (ISO 11403-2)