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TECHNYL® A 218 V30 BLACK 21

TECHNICAL DATA SHEET

Revised: December, 2016

TECHNYL® A 218 V30 Black 21 is a polyamide 66, reinforced with 30% of glass fibre, heat stabilized, for injection moulding. This grade offers an excellent combination between thermal and mechanical properties.

GENERAL

Material Status	• Commercial: Active	
Availability	• Latin America	
Filler / Reinforcement	• Glass Fiber, 30% Filler by Weight	
Additive	• Heat Stabilizer	
Key Benefits	• Good Dimensional Stability • Good Flow • Heat Aging Resistance	• Heat Stabilized (Inorganic) • Good Mold Release
Applications	• Automotive applications • Bicycles component • Cylinder head covers	• Fuel filters • Gearbox covers • Oil pans
Certification/Compliance	• EN 45545	• UL QMFZ2
RoHS Compliance	• RoHS Compliant	
Automotive Specifications	• FORD WSK-M4D642-A • GM GMW3038P-PA66-GF30H	• GM QK 003013 H Color: 21NHFE Black
Colors Available	• Black	• Natural Color
Forms	• Pellets	
Processing Method	• Injection Molding	
Resin ID (ISO 1043)	• PA66-GF30	

PROPERTIES

Typical values of properties are for Black grades

Physical	Dry	Conditioned	Unit	Test Method
Molding Shrinkage				ISO 294-4
Across Flow	1.0		%	
Flow	0.30		%	
Water Absorption				ISO 62
23°C, 24 hr	0.80		%	
Equilibrium, 23°C, 50% RH	1.7		%	
Density	1.36		g/cm³	ISO 1183/A

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	10000	7500	MPa	ISO 527-2/1A
Tensile Stress (Break, 23°C)	190	135	MPa	ISO 527-2/1A
Tensile Strain (Break, 23°C)	3.0	7.0	%	ISO 527-2
Flexural Modulus				
23°C	9000		MPa	ASTM D790
23°C	9000	6400	MPa	ISO 178

Solvay Engineering Plastics
www.solvay.com - www.technyl.com

Tel: 00 800 55 400 600
technyl-emea@solvay.com - Europe, Middle East, Africa
technyl-apac@solvay.com - Asia Pacific
technyl-americas@solvay.com - Americas

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Mechanical	Dry	Conditioned	Unit	Test Method
Flexural Strength				
23°C	290		MPa	ASTM D790
23°C	280	185	MPa	ISO 178
Charpy Notched Impact Strength (23°C)	11	15	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	75	88	kJ/m²	ISO 179/1eU
Notched Izod Impact				
23°C	120		J/m	ASTM D256
23°C	10	18	kJ/m²	ISO 180
Unnotched Izod Impact Strength (23°C)	60	65	kJ/m²	ISO 180/1U

Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, Unannealed	260		°C	ISO 75-2/Bf
1.8 MPa, Unannealed	255		°C	ISO 75-2/Af
Melting Temperature	262		°C	ISO 11357-3

Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	6.0E+15	1.0E+13	ohms	IEC 60093
Volume Resistivity	1.0E+15	1.0E+15	ohms·cm	IEC 60093
Electric Strength (2.00 mm)	34	29	kV/mm	IEC 60243-1
Relative Permittivity	3.70	4.00		IEC 60250
Dissipation Factor	0.010	0.11		IEC 60250
Comparative Tracking Index				IEC 60112
Solution A	600	600	V	
Solution B	500		V	

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)	700		°C	IEC 60695-2-12
Oxygen Index	23		%	ISO 4589-2

Additional Information	Dry	Unit	Test Method
European Railways Certifications			EN 45545-2
R22	NC		
R23	NC		

PROCESSING

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technyl-americas@solvay.com - Americas

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Injection	Dry	Unit
Drying Temperature	80	°C
Suggested Max Moisture	0.20	%
Rear Temperature	270 to 280	°C
Middle Temperature	275 to 285	°C
Front Temperature	280 to 290	°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 polyamide, 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). For Mould Temperature, in the case of parts where the surface roughness is required we can recommend a temperature of 90°C to 120°C with an optimum at 105°C.
- 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, MERCHANDABILITY 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 2002/95/EC as amended.

CUSTOMER SERVICES

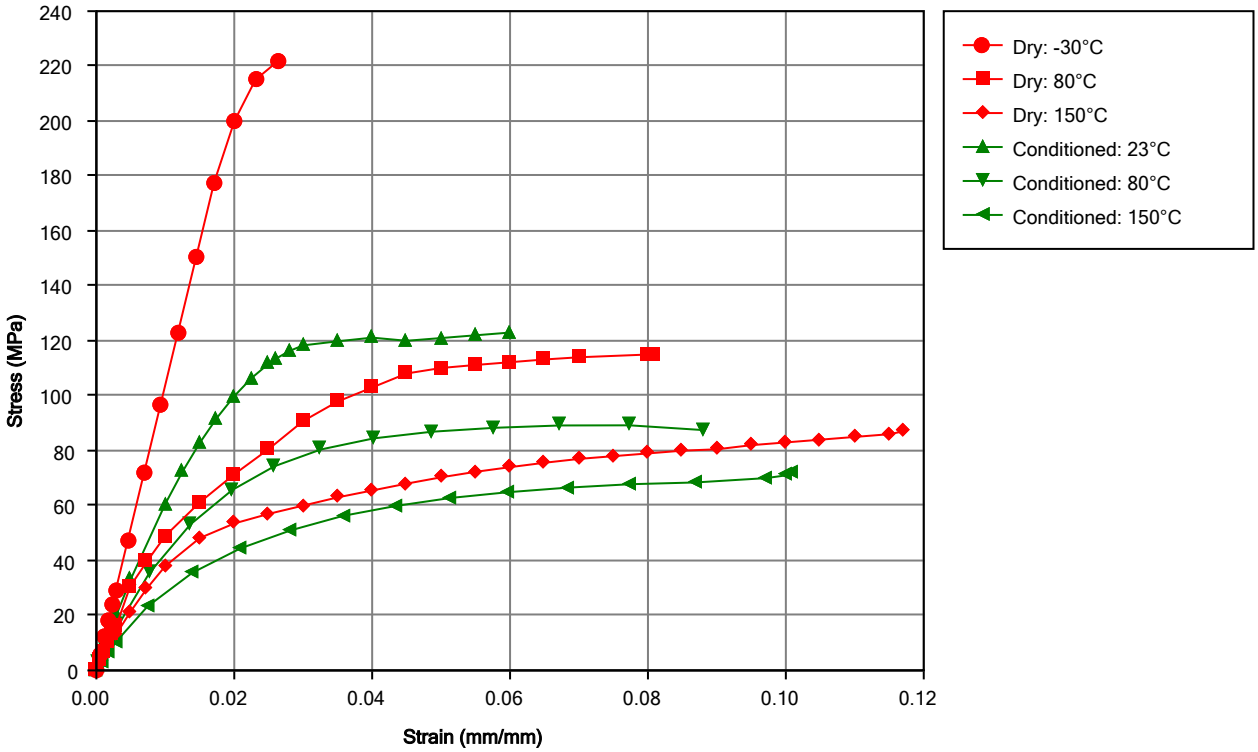
Our customer services are not only concerned with manufacturing and supply of Engineering Plastics products. We are available to assist our customers in finding technical solutions that meet their requirements. Specific support is in particular offered on:

- 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.