

TECHNYL®

TECHNYL® A 218 BLACK 21N

TECHNICAL DATA SHEET

Revised: September, 2018

TECHNYL® A 218 Black 21 N is an unreinforced polyamide 66, standard viscosity, heat stabilized for injection moulding. This grade offers all the primary properties of unreinforced polyamide 66. In addition, it has improved resistance to high temperature, and can be used for components which will withstand long-term temperature stresses.

GENERAL

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific	• Europe • North America
Additive	• Heat Stabilizer	
Key Benefits	• Heat Aging Resistance • Heat Stabilized (Inorganic)	• Good Mold Release
Applications	• Consumer and Industrial applications • Coolant pipes • Electric boxes	• Fixation systems • General purpose
Certification/Compliance	• EC 1907/2006 (REACH)	• UL QMFZ2
RoHS Compliance	• RoHS Compliant	
Automotive Specifications	• FORD WSK-M4D648-A • GM GMP.PA66.018 Color: Black	• GM GMP.PA66.018 Color: Natural • GM GMW15702-110025 Color: Natural
Colors Available	• Black	• Natural Color
Forms	• Pellets	
Processing Method	• Injection Molding	
Resin ID (ISO 1043)	• PA66	

PROPERTIES

Typical values of properties are for Black grades

Physical	Dry	Conditioned	Unit	Test Method
Molding Shrinkage				ISO 294-4
Across Flow	1.5		%	
Flow	1.6		%	
Water Absorption				ISO 62
24 hr, 23°C	1.3		%	
Equilibrium, 23°C, 50% RH	2.9		%	
Density	1.14		g/cm ³	ISO 1183/A
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	3300	1300	MPa	ISO 527-2/1A

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Strength				
Yield, 23°C	85		MPa	ASTM D638
Yield, 23°C	90	60	MPa	ISO 527-2/1A
Break, 23°C	55	50	MPa	ISO 527-2/1A
Tensile Elongation				
Yield, 23°C	85		%	ASTM D638
Yield, 23°C	4.0	10	%	ISO 527-2
Break, 23°C	30		%	ASTM D638
Break, 23°C	> 20	> 300	%	ISO 527-2
Flexural Modulus				
23°C	3300		MPa	ASTM D790
23°C	3000	1300	MPa	ISO 178
Flexural Strength				
23°C	125		MPa	ASTM D790
23°C	120	70.0	MPa	ISO 178
Charpy Notched Impact Strength (23°C)	4.5		10 kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	No Break	No Break		ISO 179/1eU
Notched Izod Impact				
23°C	80		J/m	ASTM D256
23°C	4.0		10 kJ/m²	ISO 180
Unnotched Izod Impact Strength (23°C)	No Break	No Break		ISO 180/1U
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load				
0.45 MPa, Unannealed	220		°C	ASTM D648
0.45 MPa, Unannealed	200		°C	ISO 75-2/Bf
1.8 MPa, Unannealed	82		°C	ISO 75-2/Af
Melting Temperature	263		°C	ISO 11357-3

Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	1.0E+15	1.0E+14	ohms	IEC 60093
Volume Resistivity	1.0E+15	1.0E+16	ohms·cm	IEC 60093
Electric Strength				IEC 60243-1
23°C, 0.800 mm	35		kV/mm	
23°C, 2.00 mm	22		kV/mm	
Relative Permittivity (23°C, 2.00 mm, 1 MHz)	2.90			IEC 60250
Dissipation Factor (1 MHz)	0.032			IEC 60250
Comparative Tracking Index				IEC 60112
Solution A	600	600	V	
Solution B	350		V	
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
1.6 mm	V-2			
3.2 mm	V-2			
Glow Wire Flammability Index (1.6 mm)	650		°C	IEC 60695-2-12

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 285	°C
Mold Temperature	60 to 80	°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 unfilled polyamides, Solvay recommends the use of high alloy steel with a low chromium content. For example: X38CrMoV5-1 (EN Norm) - 1.2367 /1.2343 (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, 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 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)

