

TECHNYL® A 217 Black 1 N is an unreinforced polyamide 66, heat stabilized, standard viscosity, for injection moulding. This grade offers all the primary properties of unreinforced polyamide 66. In addition it has improved resistance to high temperature and it can be used for components which have to withstand mid term temperature stresses. This grade can also be vacuum metalized with very good surface quality and adhesion of the aluminum surface.

GENERAL

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Additive	• Heat Stabilizer	
Key Benefits	• Good Flow • Heat Stabilized (Inorganic)	• Metallizable • Good Mold Release
Applications	• Automotive applications • Connectors • Door lock mechanism	• Electrical/Electronic Applications • Fixation systems • Head lamp bezels
Certification/Compliance	• EC 1907/2006 (REACH) • EN 45545	• UL QMFZ2
RoHS Compliance	• RoHS Compliant	
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	1.4		%	
Flow	1.4		%	
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)	3500	1700	MPa	ISO 527-2/1A

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Strength				
Yield, 23°C	85		MPa	ASTM D638
Yield, 23°C	95	60	MPa	ISO 527-2/1A
Break, 23°C	60	45	MPa	ISO 527-2/1A
Tensile Strain				
Yield, 23°C	4.5	10	%	ISO 527-2
Break, 23°C	30		%	ASTM D638
Break, 23°C	> 12	> 45	%	ISO 527-2
Flexural Modulus				
23°C	3500		MPa	ASTM D790
23°C	3100	1450	MPa	ISO 178
Flexural Strength				
23°C	125		MPa	ASTM D790
23°C	130	80.0	MPa	ISO 178
Charpy Notched Impact Strength (23°C)	4.5	11	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	210		°C	ISO 75-2/Bf
1.8 MPa, Unannealed	75		°C	ASTM D648 ISO 75-2/Af
Melting Temperature	262		°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	450		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				IEC
0.8 mm	650		°C	60695-2-12
1.6 mm	650		°C	
Glow Wire Ignition Temperature (1.6 mm)	650		°C	IEC 60695-2-13
Additional Information				Test Method
European Railways Certifications			Dry Unit	EN 45545-2
R22			HL2	
R23			HL2	

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

You can find more information on Solvay Product range on our internet product finder at the following address: <http://www.technyl.com>

Notes

Typical properties: these are not to be construed as specifications.