

TECHNYL<sup>®</sup> A 218G V33 Black 34N is a polyamide 66, reinforced with 33% of glass fiber, heat stabilized, for injection moulding. This grade has been specially designed to improve its resistance to automotive cooling liquids, increasing lifetime of parts in permanent contact with such liquids.

### 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	• Heat Stabilizer	
Key Benefits	• Good Flow • Glycol Resistance • Heat Aging Resistance	• Heat Stabilized (Inorganic) • Hydrolysis Resistant • Good Mold Release
Applications	• Automotive applications • Coolant pipes • Cooling connectors • Expansion tanks • General purpose	• Radiator end tanks • Structural parts • Suspension components • Transmission cover
Certification/Compliance	• EC 1907/2006 (REACH)	
RoHS Compliance	• RoHS Compliant	
Automotive Specifications	• GM GMP.PA66.013 Color: Black	• GM GMW15702-110027 Color: Black
Colors Available	• Black	
Forms	• Pellets	
Processing Method	• Injection Molding	
Resin ID (ISO 1043)	• PA66-GF33	

### PROPERTIES

Typical values of properties are for Black grades

Physical	Dry	Conditioned	Unit	Test Method
Water Absorption				ISO 62
24 hr, 23°C	0.78		%	
Saturation, 23°C	5.3		%	
Equilibrium, 23°C, 50% RH	1.7		%	
Density	1.39		g/cm <sup>3</sup>	ISO 1183/A
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	11300	7800	MPa	ISO 527-2/1A
Tensile Strength				
Break, 23°C	190		MPa	ASTM D638
Break, 23°C	195	140	MPa	ISO 527-2/1A

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Elongation				
Break, 23°C	3.5		%	ASTM D638
Break, 23°C	3.4	7.0	%	ISO 527-2
Flexural Modulus				
23°C	10200		MPa	ASTM D790
23°C	10000	7000	MPa	ISO 178
Flexural Strength				
23°C	280		MPa	ASTM D790
23°C	300		MPa	ISO 178
Charpy Notched Impact Strength (23°C)	12	15	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	90	100	kJ/m <sup>2</sup>	ISO 179/1eU
Notched Izod Impact				
23°C	120		J/m	ASTM D256
23°C	12	18	kJ/m <sup>2</sup>	ISO 180
<b>Thermal</b>	<b>Dry</b>	<b>Conditioned</b>	<b>Unit</b>	<b>Test Method</b>
Deflection Temperature Under Load				
1.8 MPa, Unannealed	255		°C	ASTM D648
1.8 MPa, Unannealed	250		°C	ISO 75-2/Af
Melting Temperature	262		°C	ISO 11357-3
<b>Electrical</b>	<b>Dry</b>	<b>Conditioned</b>	<b>Unit</b>	<b>Test Method</b>
Surface Resistivity	6.0E+15	1.0E+13	ohms	IEC 60093
Volume Resistivity	5.0E+16	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 (Solution A)	400		V	IEC 60112
<b>Flammability</b>	<b>Dry</b>	<b>Conditioned</b>	<b>Unit</b>	<b>Test Method</b>
Flame Rating (1.6 mm)	HB			UL 94
Glow Wire Flammability Index (1.6 mm)	650		°C	IEC 60695-2-12
Oxygen Index	23		%	ISO 4589-2

## PROCESSING

Injection	Dry	Unit
Drying Temperature	80	°C
Suggested Max Moisture	0.15	%
Rear Temperature	270 to 280	°C
Middle Temperature	275 to 285	°C
Front Temperature	280 to 290	°C

**Injection****Dry Unit**

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**

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

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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

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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

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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:

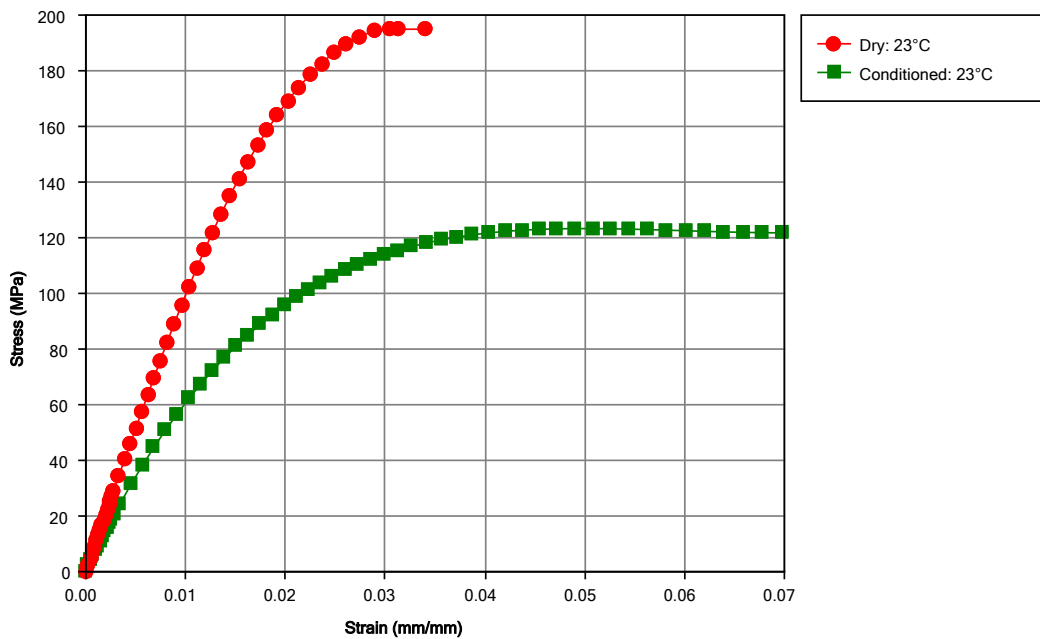
- Material selection
- Material testing
- Parts design advice, training for design engineers
- Part testing
- Design simulation
- Processing through different technologies
- Assembly and post-processing technology expertise
- Parts optimization through Computer Aided Design

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.