

TECHNYL® C 218 V50 Black 21N is a polyamide PA6, reinforced with 50% of glass fibre, heat stabilized, for injection moulding. This grade offers high mechanical strength, high surface aspect by easy flow & low pressure moulding for injection moulding.

### GENERAL

|                        |                                                                                                                                                                                                                    |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Material Status        | • Commercial: Active                                                                                                                                                                                               |
| Availability           | • Asia Pacific                                                                                                                                                                                                     |
| Filler / Reinforcement | • Glass Fiber, 50% Filler by Weight                                                                                                                                                                                |
| Additive               | • Heat Stabilizer                                                                                                                                                                                                  |
| Key Benefits           | <ul style="list-style-type: none"> <li>• Good Dimensional Stability</li> <li>• Good Flow</li> <li>• Heat Stabilized (Inorganic)</li> <li>• High Stiffness</li> </ul>                                               |
| Applications           | <ul style="list-style-type: none"> <li>• Automotive applications</li> <li>• Fuel circuit</li> <li>• Gear shift housing</li> <li>• Power tool housings</li> <li>• Pulleys</li> <li>• Thermostat housings</li> </ul> |
| RoHS Compliance        | • RoHS Compliant                                                                                                                                                                                                   |
| Colors Available       | • Black                                                                                                                                                                                                            |
| Forms                  | • Pellets                                                                                                                                                                                                          |
| Processing Method      | • Injection Molding                                                                                                                                                                                                |
| Resin ID (ISO 1043)    | • PA6-GF50                                                                                                                                                                                                         |

### PROPERTIES

Typical values of properties are for Black grades

| Physical                       | Dry  | Conditioned | Unit  | Test Method |
|--------------------------------|------|-------------|-------|-------------|
| Molding Shrinkage              |      |             |       | ISO 294-4   |
| Across Flow                    | 0.70 |             | %     |             |
| Flow                           | 0.20 |             | %     |             |
| Water Absorption (24 hr, 23°C) | 0.75 |             | %     | ISO 62      |
| Density                        | 1.53 |             | g/cm³ | ISO 1183/A  |

| Mechanical               | Dry   | Conditioned | Unit | Test Method  |
|--------------------------|-------|-------------|------|--------------|
| Tensile Modulus (23°C)   | 16000 | 10300       | MPa  | ISO 527-2/1A |
| Tensile Strength         |       |             |      |              |
| Break, 23°C              | 220   |             | MPa  | ASTM D638    |
| Break, 23°C              | 210   | 130         | MPa  | ISO 527-2/1A |
| Tensile Elongation       |       |             |      |              |
| Break, 23°C              | 2.5   |             | %    | ASTM D638    |
| Break, 23°C              | 2.3   | 3.8         | %    | ISO 527-2    |
| Flexural Modulus (23°C)  | 14000 |             | MPa  | ASTM D790    |
| Flexural Strength (23°C) | 190   |             | MPa  | ASTM D790    |

| Mechanical                                      | Dry     | Conditioned | Unit    | Test Method |
|-------------------------------------------------|---------|-------------|---------|-------------|
| Charpy Notched Impact Strength (23°C)           | 16      | 20          | kJ/m²   | ISO 179/1eA |
| Charpy Unnotched Impact Strength (23°C)         | 80      | 85          | kJ/m²   | ISO 179/1eU |
| Notched Izod Impact                             |         |             |         |             |
| 23°C                                            | 190     |             | J/m     | ASTM D256   |
| 23°C                                            | 16      | 22          | kJ/m²   | ISO 180     |
| Unnotched Izod Impact Strength (23°C)           | 75      | 80          | kJ/m²   | ISO 180/1U  |
| Thermal                                         | Dry     | Conditioned | Unit    | Test Method |
| Deflection Temperature Under Load               |         |             |         |             |
| 1.8 MPa, Unannealed                             | 215     |             | °C      | ASTM D648   |
| 1.8 MPa, Unannealed                             | 208     |             | °C      | ISO 75-2/Af |
| Melting Temperature                             | 222     |             | °C      | ISO 11357-3 |
| Electrical                                      | Dry     | Conditioned | Unit    | Test Method |
| Surface Resistivity                             | 1.0E+13 | 1.0E+11     | ohms    | IEC 60093   |
| Volume Resistivity                              | 1.0E+15 | 1.0E+11     | ohms·cm | IEC 60093   |
| Electric Strength (2.00 mm)                     |         | 22          | kV/mm   | IEC 60243-1 |
| Relative Permittivity<br>(23°C, 2.00 mm, 1 MHz) | 2.80    |             |         | IEC 60250   |
| Dissipation Factor (1 MHz)                      | 0.019   |             |         | IEC 60250   |
| Comparative Tracking Index (Solution A)         | 400     |             | V       | IEC 60112   |

## PROCESSING

| Injection              | Dry        | Unit |
|------------------------|------------|------|
| Drying Temperature     | 80         | °C   |
| Suggested Max Moisture | 0.20       | %    |
| Rear Temperature       | 235 to 240 | °C   |
| Middle Temperature     | 240 to 250 | °C   |
| Front Temperature      | 250 to 260 | °C   |
| Mold Temperature       | 60 to 90   | °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, 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

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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.

## 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

### MULTIPOINT DATA

Isothermal Stress vs. Strain (ISO 11403-1)

