

TECHNYL® A 218 V30 Black 21NS is a polyamide 66, reinforced with 30% of glass fibre, heat stabilized, for injection moulding.

### GENERAL

|                           |                                                                             |                                                      |
|---------------------------|-----------------------------------------------------------------------------|------------------------------------------------------|
| Material Status           | • Commercial: Active                                                        |                                                      |
| Availability              | • Africa & Middle East<br>• Asia Pacific<br>• Europe                        | • Latin America<br>• North America                   |
| Filler / Reinforcement    | • Glass Fiber, 30% Filler by Weight                                         |                                                      |
| Additive                  | • Heat Stabilizer                                                           |                                                      |
| Key Benefits              | • Good Flow<br>• Heat Aging Resistance                                      | • Heat Stabilized (Inorganic)<br>• Good Mold Release |
| Applications              | • Automotive applications<br>• Bicycles component<br>• Cylinder head covers | • Fuel filters<br>• Gearbox covers<br>• Oil pans     |
| Certification/Compliance  | • EC 1907/2006 (REACH)                                                      | • UL QMFZ2                                           |
| RoHS Compliance           | • RoHS Compliant                                                            |                                                      |
| Automotive Specifications | • RENAULT PMR 2017 AS 23                                                    |                                                      |
| 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                  | 1.1   |             | %     |              |
| Flow                         | 0.40  |             | %     |              |
| Water Absorption             |       |             |       | ISO 62       |
| 24 hr, 23°C                  | 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    |

| Mechanical                              | Dry      | Conditioned     | Unit        | Test Method |
|-----------------------------------------|----------|-----------------|-------------|-------------|
| Flexural Modulus                        |          |                 |             |             |
| 23°C                                    | 9000     | MPa             | ASTM D790   |             |
| 23°C                                    | 9000     | 6400 MPa        | ISO 178     |             |
| Flexural Strength                       |          |                 |             |             |
| 23°C                                    | 290      | MPa             | ASTM D790   |             |
| 23°C                                    | 290      | 215 MPa         | ISO 178     |             |
| Charpy Notched Impact Strength (23°C)   | 11       | 15 kJ/m²        | ISO 179/1eA |             |
| Charpy Unnotched Impact Strength (23°C) | 75       | 85 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                    | •<br>260 | °C              | ISO 75-2/Bf |             |
| 1.8 MPa, Unannealed                     | •<br>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 (Solution A) | 400      | V               | IEC 60112   |             |

| Flammability                          | Dry | Conditioned | Unit | Test Method    |
|---------------------------------------|-----|-------------|------|----------------|
| Flame Rating                          |     |             |      | UL 94          |
| 0.8 mm                                | HB  |             |      |                |
| 1.6 mm                                | HB  |             |      |                |
| 3.2 mm                                | HB  |             |      |                |
| Glow Wire Flammability Index (1.6 mm) | 650 |             | °C   | IEC 60695-2-12 |
| Oxygen Index                          | 23  |             | %    | ISO 4589-2     |
| Additional Information                |     |             |      | Test Method    |
| European Railways Certifications      |     |             |      | EN 45545-2     |
| R22                                   |     |             | NC   |                |
| R23                                   |     |             | NC   |                |

## PROCESSING

| 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 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

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## 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

### MULTIPOINT DATA

Isothermal Stress vs. Strain (ISO 11403-1)

