



## TECHNYL STAR® S 218 V35 NATURAL

TECHNICAL DATA SHEET

Revised: February, 2019

TECHNYL STAR® S 218 V35 Natural is based on a patented high flow polyamide 6 resin (TechnylStar), heat stabilized, reinforced with 35% of glass fibre, for injection moulding. Due to its outstanding flow characteristics, this grade provides a significant productivity improvement and allows more freedom in mould and part design versus a standard polyamide solutions.

### GENERAL

|                          |                                                                              |                                                        |
|--------------------------|------------------------------------------------------------------------------|--------------------------------------------------------|
| Material Status          | • Commercial: Active                                                         |                                                        |
| Availability             | • Africa & Middle East<br>• Asia Pacific                                     | • Europe<br>• North America                            |
| Filler / Reinforcement   | • Glass Fiber, 35% Filler by Weight                                          |                                                        |
| Additive                 | • Heat Stabilizer                                                            |                                                        |
| Key Benefits             | • Good Dimensional Stability<br>• High Flow<br>• Heat Stabilized (Inorganic) | • Good Mold Release<br>• Superior Surface Finish       |
| Applications             | • Consumer and Industrial applications<br>• Fixation systems<br>• Furnitures | • General purpose<br>• Switch, Plug, Control & Sockets |
| Certification/Compliance | • EC 1907/2006 (REACH)                                                       | • UL QMFZ2                                             |
| RoHS Compliance          | • RoHS Compliant                                                             |                                                        |
| Colors Available         | • Black                                                                      | • Natural Color                                        |
| Forms                    | • Pellets                                                                    |                                                        |
| Processing Method        | • Injection Molding                                                          | • MuCell® Injection Molding                            |
| Resin ID (ISO 1043)      | • PA6-GF35                                                                   |                                                        |

### PROPERTIES

Typical values of properties are for Natural grades

| Physical                  | Dry  | Conditioned | Unit              | Test Method |
|---------------------------|------|-------------|-------------------|-------------|
| Molding Shrinkage         |      |             |                   | ISO 294-4   |
| Across Flow               | 0.80 |             | %                 |             |
| Flow                      | 0.10 |             | %                 |             |
| Water Absorption          |      |             |                   | ISO 62      |
| 24 hr, 23°C               | 0.90 |             | %                 |             |
| Equilibrium, 23°C, 50% RH | 1.9  |             | %                 |             |
| Density                   | 1.41 |             | g/cm <sup>3</sup> | ISO 1183/A  |

| Mechanical                                         | Dry   | Conditioned | Unit  | Test Method       |
|----------------------------------------------------|-------|-------------|-------|-------------------|
| Tensile Modulus (23°C)                             | 11000 | 7400        | MPa   | ISO 527-2/1A      |
| Tensile Stress (Break, 23°C)                       | 195   | 115         | MPa   | ISO 527-2/1A      |
| Tensile Strain (Break, 23°C)                       | 3.0   | 4.0         | %     | ISO 527-2         |
| Flexural Modulus (23°C)                            | 10000 | 6200        | MPa   | ISO 178           |
| Flexural Stress (23°C)                             | 285   | 195         | MPa   | ISO 178           |
| Charpy Notched Impact Strength (23°C)              | 11    | 16          | kJ/m² | ISO 179/1eA       |
| Charpy Unnotched Impact Strength (23°C)            | 60    | 70          | kJ/m² | ISO 179/1eU       |
| Notched Izod Impact Strength (23°C)                | 11    | 16          | kJ/m² | ISO 180           |
| Unnotched Izod Impact Strength (23°C)              | 75    | 80          | kJ/m² | ISO 180/1U        |
| Thermal                                            | Dry   | Conditioned | Unit  | Test Method       |
| Heat Deflection Temperature<br>1.8 MPa, Unannealed | 210   |             | °C    | ISO 75-2/Af       |
| Melting Temperature                                | 222   |             | °C    | ISO 11357-3       |
| Flammability                                       | Dry   | Conditioned | Unit  | Test Method       |
| Flame Rating (3.2 mm)                              | HB    |             |       | UL 94             |
| Glow Wire Flammability Index (1.6 mm)              | 650   |             | °C    | IEC<br>60695-2-12 |

## PROCESSING

| Injection              | Dry        | Unit |
|------------------------|------------|------|
| Drying Temperature     | 80         | °C   |
| Suggested Max Moisture | 0.20       | %    |
| Rear Temperature       | 230 to 235 | °C   |
| Middle Temperature     | 235 to 240 | °C   |
| Front Temperature      | 240 to 245 | °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, 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

### Notes

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