

TECHNICAL DATA SHEET

## TECHNYL A 238 V13 BK 21N

TECHNYL A 238 V13 BK 21N is a polyamide 6.6, reinforced with 13% of glass fiber, heat stabilized, impact modified, for injection moulding. This grade offers excellent combination between rigidity and impact resistance at ambient temperature.

### General

|                       |  |  |
|-----------------------|--|--|
| Certifications        | RoHS   | EC 1907/2006 (REACH)                             |
| Polymer type          | PA66   |  |
| Feature               | heat-aging stabilized                              | impact modified                                  |
| Applications          | connectors<br>fasteners<br>industrial applications | consumer applications<br>home & office furniture |
| Colors available      | black  | natural  |
| Forms                 | pellets  |  |
| Processing technology | injection moulding                                 |  |

### Product identification

|                       |                       |
|-----------------------|-----------------------|
| ISO 1043 abbreviation | PA66-GF13             |
| ISO 16396 designation | PA66,GF13,MHP,S14-050 |

| Condition | Standard | Unit | Value |
|-----------|----------|------|-------|
|-----------|----------|------|-------|

### Physical properties

|                              | Condition      | Standard        | Unit              | Value     |
|------------------------------|----------------|-----------------|-------------------|-----------|
| Density                      |                | ISO 1183        | g/cm <sup>3</sup> | 1.2       |
| Humidity absorption          | T=23°C, 50% RH | ISO 62          | %                 | 2.0 - 2.1 |
| Water absorption             | 24 hr, 23°C    | ISO 62          | %                 | 0.9       |
| Water absorption, saturation |                |                 | %                 | 6.6       |
| Molding shrinkage, parallel  |                | ISO 294-4, 2577 | %                 | 0.2 - 0.4 |
| Molding shrinkage, normal    |                | ISO 294-4, 2577 | %                 | 0.7 - 0.9 |

|                                       | Condition | Standard     | Unit              | Value               |
|---------------------------------------|-----------|--------------|-------------------|---------------------|
| <b>Mechanical properties</b>          |           |              |                   | <b>dam / cond.*</b> |
| Tensile modulus                       | 1 mm/min  | ISO 527-1/-2 | MPa               | 5300 / 3300         |
| Stress at break                       |           | ISO 527-1/-2 | MPa               | 100 / 60            |
| Strain at break                       |           | ISO 527-1/-2 | %                 | 3 / 7.2             |
| Flexural modulus, ISO 178             | 2 mm/min  | ISO 178      | MPa               | 4450 / 2800         |
| Flexural strength, ISO 178            | 2 mm/min  | ISO 178      | MPa               | 155 / 95            |
| Charpy impact strength, +23°C         | +23°C     | ISO 179/1eU  | kJ/m <sup>2</sup> | 55 / 60             |
| Charpy impact strength, -30°C         | -30°C     | ISO 179/1eU  | kJ/m <sup>2</sup> | 40 / 40             |
| Charpy notched impact strength, +23°C | +23°C     | ISO 179/1eA  | kJ/m <sup>2</sup> | 6 / 8               |
| Charpy notched impact strength, -30°C | -30°C     | ISO 179/1eA  | kJ/m <sup>2</sup> | 4.9 / 4.7           |
| Izod impact strength, +23°C           | +23°C     | ISO 180/1U   | kJ/m <sup>2</sup> | 50 / -              |
| Izod notched impact strength, +23°C   | +23°C     | ISO 180/1A   | kJ/m <sup>2</sup> | 6.5 / 8             |

\*: **conditioned according to ISO 1110**

|  | Condition | Standard    | Unit | Value |
|--|-----------|-------------|------|-------|
| <b>Thermal properties</b>                |           |             |      |       |
| Melting temperature, 10°C/min            |           | ISO 11357-1 | °C   | 263   |
| Temp. of deflection under load, 1.80 MPa | 1.80 MPa  | ISO 75      | °C   | 228   |

|                                     | Condition | Standard  | Unit | Value       |
|-------------------------------------|-----------|-----------|------|-------------|
| <b>Burning behaviour</b>            |           |           |      |             |
| Flammability, 1.5 mm                | 1.5 mm    | UL 94     |      | HB          |
| Burning rate, FMVSS, Thickness 1 mm |           | FMVSS 302 |      | <100 mm/min |

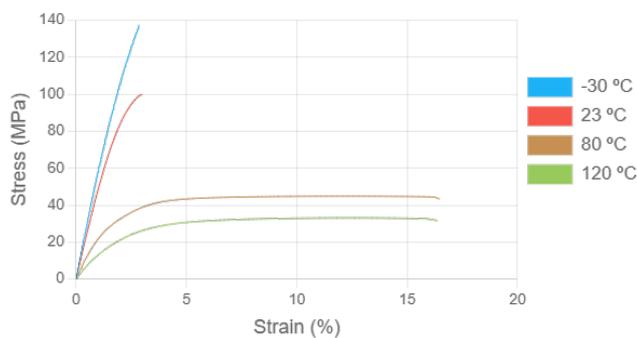
|                              |              |  |  |  |
|------------------------------|--------------|--|--|--|
| <b>Processing conditions</b> |              |  |  |  |
| Drying temperature/time      | 80 °C        |  |  |  |
| Suggested max moisture       | 0.2 %        |  |  |  |
| Rear temperature             | 270 - 280 °C |  |  |  |

## Processing conditions

|                               |              |
|-------------------------------|--------------|
| Middle temperature            | 275 - 285 °C |
| Front temperature             | 280 - 290 °C |
| Recommended mould temperature | 70 - 100 °C  |

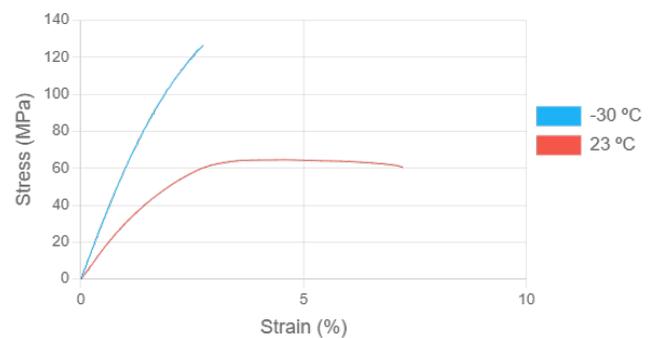
### Stress-strain, dry

Temperature (°C)



### Stress-strain, conditioned

Temperature (°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 minimum -20°C. Recommended time 2-4h.

## Injection advice

For reinforced polyamides, Domo 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.