

TECHNICAL DATA SHEET

TECHNYL STAR S 216 V50 BK 21N
(Previously DOMAMID VHF 6G50 BK999)

Polyamide 6, 50% glass fiber reinforced, high flowability, improved surface finish, for injection moulding

General

| | | | |
|-----------------------|---|----------------------|--|
| Feature | High flowability, improved surface finish | | |
| Polymer type | PA6 (Polyamide 6) | | |
| Processing technology | Injection molding | | |
| Certification | RoHS | EC 1907/2006 (REACH) | |
| Colors available | Black | | |
| Forms | Pellets | | |

Product identification

| | |
|-----------------------|---------------------|
| ISO 1043 abbreviation | PA6-GF50 |
| ISO 16396 designation | PA6,GF50,M1,S10-140 |

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

Physical properties

| | | | | |
|-----------------------------|-----------|-----------------|-------|-----------|
| Density | | ISO 1183 | g/cm³ | 1.57 |
| Molding shrinkage, parallel | | ISO 294-4, 2577 | % | 0.1 - 0.2 |
| Molding shrinkage, normal | | ISO 294-4, 2577 | % | 0.4 - 0.6 |
| Viscosity number | 96% H2SO4 | ISO 307 | cm³/g | 110 |

Mechanical properties

dam / cond.*

| | | | | |
|---------------------------------------|----------|--------------|-------|---------------|
| Tensile modulus | 1 mm/min | ISO 527-1/-2 | MPa | 15000 / 10000 |
| Stress at break | 5 mm/min | ISO 527-1/-2 | MPa | 205 / 130 |
| Strain at break | 5 mm/min | ISO 527-1/-2 | % | 2 / 4 |
| Flexural modulus, ISO 178 | 2 mm/min | ISO 178 | MPa | 14000 / 8000 |
| Flexural strength, ISO 178 | 2 mm/min | ISO 178 | MPa | 310 / 190 |
| Charpy impact strength, +23°C | +23°C | ISO 179/1eU | kJ/m² | 85 / 100 |
| Charpy notched impact strength, +23°C | +23°C | ISO 179/1eA | kJ/m² | 19 / 25 |
| Izod impact strength, +23°C | +23°C | ISO 180/1U | kJ/m² | 80 / 90 |
| Izod notched impact strength, +23°C | +23°C | ISO 180/1A | kJ/m² | 18 / 25 |

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| | Condition | Standard | Unit | Value |
|--|--------------|-------------|------|-------|
| Thermal properties | | | | |
| Melting temperature, 10°C/min | | ISO 11357-1 | °C | 221 |
| Temp. of deflection under load, 0.45 MPa | 0.45 MPa | ISO 75 | °C | 220 |
| Temp. of deflection under load, 1.80 MPa | 1.80 MPa | ISO 75 | °C | 210 |
| Vicat softening temperature | 50°C/h - 50N | ISO 306 | °C | 215 |

Electrical properties

| | | | | |
|---------------------|--|---------------|-------|--------|
| Volume resistivity | | IEC 62631-3-1 | ohm.m | 1E+013 |
| Surface resistivity | | IEC 62631-3-1 | ohm | 1E+013 |

Burning behaviour

| | | | | |
|-------------------------------------|---------|-----------|--|--------------|
| Flammability, 0.75 mm | 0.75 mm | UL 94 | | HB |
| Burning rate, FMVSS, Thickness 1 mm | | FMVSS 302 | | < 100 mm/min |

Test run at 23°C if not differently specified, DAM state (dry as moulded), valid for natural colored products.
*: conditioned according to ISO 1110

Processing conditions

| | |
|-------------------------------|---|
| Drying temperature/time | 75-85°C / 2-4h (with dew point of dried air < -30 °C) |
| Recommended melt temperature | 260 - 280 °C |
| Recommended mould temperature | 90 - 100 °C |

These parameters are typical of the product but should be related to the type of machinery used and to the type of moulded part.

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.

Disclaimer

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