

TECHNICAL DATA SHEET

**TECHNYL PROTECT C 60G1 V30 BK - BK R9005**  
(Previously DOMAMID FR 6G30VOE BK - BK R9005)

Polyamide 6, 30% glass fiber reinforced, halogen and red phosphorus free flame retardant, heat-aging stabilized, for injection moulding, black

**General**

|                       |                                |   |
|-----------------------|--------------------------------|---|
| Feature               | UL V0<br>Heat-aging stabilized | Halogen and red phosphorus free flame retardant |
| Polymer type          | PA6 (Polyamide 6)              |   |
| Processing technology | Injection molding              |   |
| Certification         | RoHS<br>EC 1907/2006 (REACH)   | UL-Yellow Card                                  |
| Colors available      | Black<br>Grey                  | Natural   |
| Forms                 | Pellets                        |   |

**Product identification**

|                       |                            |
|-----------------------|----------------------------|
| ISO 1043 abbreviation | PA6-GF30 FR(40)            |
| ISO 16396 designation | PA6,GF30FR(40),M1H,S14-110 |

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

**Physical properties**

|                             | Condition | Standard        | Unit               | Value     |
|-----------------------------|-----------|-----------------|--------------------|-----------|
| Density                     |           | ISO 1183        | g/cm <sup>3</sup>  | 1.42      |
| Molding shrinkage, parallel |           | ISO 294-4, 2577 | %                  | 0.2 - 0.4 |
| Molding shrinkage, normal   |           | ISO 294-4, 2577 | %                  | 0.6 - 0.8 |
| Viscosity number            | 96% H2SO4 | ISO 307         | cm <sup>3</sup> /g | 145       |

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|                                       | Condition | Standard     | Unit              | Value               |
|---------------------------------------|-----------|--------------|-------------------|---------------------|
| <b>Mechanical properties</b>          |           |              |                   | <b>dam / cond.*</b> |
| Tensile modulus                       | 1 mm/min  | ISO 527-1/-2 | MPa               | 11000 / 7000        |
| Stress at break                       | 5 mm/min  | ISO 527-1/-2 | MPa               | 140 / 95            |
| Strain at break                       | 5 mm/min  | ISO 527-1/-2 | %                 | 2.5 / 3.5           |
| Flexural modulus, ISO 178             | 2 mm/min  | ISO 178      | MPa               | 10000 / 6500        |
| Flexural strength, ISO 178            | 2 mm/min  | ISO 178      | MPa               | 210 / 140           |
| Charpy impact strength, +23°C         | +23°C     | ISO 179/1eU  | kJ/m <sup>2</sup> | 50 / 55             |
| Charpy impact strength, -30°C         | -30°C     | ISO 179/1eU  | kJ/m <sup>2</sup> | 45 / 45             |
| Charpy notched impact strength, +23°C | +23°C     | ISO 179/1eA  | kJ/m <sup>2</sup> | 8 / 11              |
| Charpy notched impact strength, -30°C | -30°C     | ISO 179/1eA  | kJ/m <sup>2</sup> | 7 / 8               |
| Izod impact strength, +23°C           | +23°C     | ISO 180/1U   | kJ/m <sup>2</sup> | 45 / 50             |
| Izod notched impact strength, +23°C   | +23°C     | ISO 180/1A   | kJ/m <sup>2</sup> | 8 / 10              |

**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 | 215 |
| Temp. of deflection under load, 1.80 MPa | 1.80 MPa     | ISO 75      | °C | 205 |
| Vicat softening temperature              | 50°C/h - 50N | ISO 306     | °C | 210 |

**Electrical properties**

|                                |            |               |       |        |
|--------------------------------|------------|---------------|-------|--------|
| Volume resistivity             |            | IEC 62631-3-1 | ohm.m | 1E+016 |
| Surface resistivity            |            | IEC 62631-3-1 | ohm   | 1E+014 |
| Comparative tracking index     | Solution A | IEC 60112     | V     | 600    |
| CTI performance level category |            | Sol A         |       | PLC 0  |
| Dielectric strength            | 1 mm       | IEC 60243-1   | kV/mm | 31     |

**Burning behaviour**

|   |   |                |    |              |
|---|---|----------------|----|--------------|
| UL Yellow Card availability  | Click here to have access to the UL Yellow Card → <a href="https://www.ul.com/Products/Plastics/TECHNYL-PROTECT-C-60G1-V30-BK-BK-R9005">E170540-103930220</a> |                |    |              |
| Flammability, 0.75 mm   | 0.75 mm   | UL 94          |    | V0           |
| Flammability, 1.5 mm  | 1.5 mm  | UL 94          |    | V0           |
| Flammability, 3.0 mm  | 3.0 mm  | UL 94          |    | V0           |
| Glow-wire flammability index, GWFI  | 1-3 mm  | IEC 60695-2-12 | °C | 960          |
| Glow-wire ignition temperature, GWIT  | 1-3 mm  | IEC 60695-2-13 | °C | 775          |
| 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).

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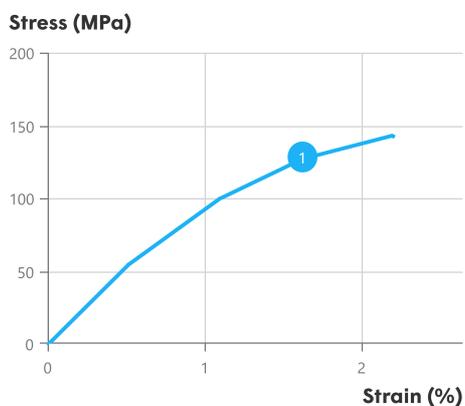
\*: conditioned according to ISO 1110

**Processing conditions**

|                               |   |
|-------------------------------|---|
| Drying temperature/time       | 75-85°C / 2-4h (with dew point of dried air < -30 °C) |
| Recommended melt temperature  | 240 - 270 °C  |
| Recommended mould temperature | 80 - 100 °C   |

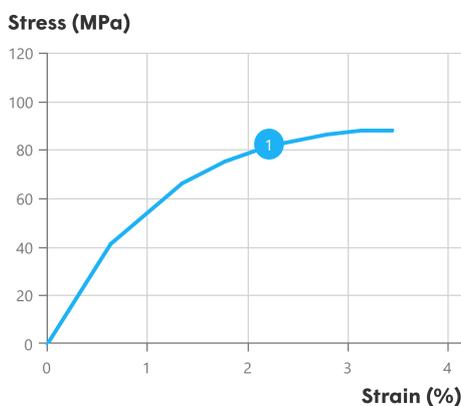
These parameters are typical of the product but should be related to the type of machinery used and to the type of moulded part.

Stress-strain, dry



| Temperature (°C) |               |
|------------------|---------------|
| 1                | Spannung<br>1 |

Stress-strain, conditioned



| Temperature (°C) |               |
|------------------|---------------|
| 1                | Spannung<br>1 |