

TECHNICAL DATA SHEET

TECHNYL PROTECT C 50H2 NC
(Previously TECHNYL C 50H2 NATURAL)

TECHNYL PROTECT C 50H2 NC is an unreinforced polyamide 6 based on a non-phosphorous and non-halogenated flame retardant system, heat stabilized, for injection moulding. This product, UL94 VO @ 0,4mm, offers excellent moldability together with good stiffness.

General

| | | | |
|-----------------------|------------------------------------|---|--|
| Feature | halogen free flame retardant | | |
| Polymer type | PA6 (Polyamide 6) | | |
| Processing technology | Injection molding | | |
| Certification | RoHS EC 1907/2006 (REACH) | UL-Yellow Card European Railways Certifications EN 45545-2 | |
| Applications | Electrical/Electronic Applications | | |
| Colors available | Black Grey | Natural | |
| Forms | Pellets | | |

Product identification

| | |
|-----------------------|-------------------------|
| ISO 1043 abbreviation | PA6 FR(30) |
| ISO 16396 designation | PA6,0FR(30)0,M1,S14-030 |

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

Physical properties

| | Condition | Standard | Unit | Value |
|-----------------------------|-------------|-----------------|-------------------|-----------|
| Density | | ISO 1183 | g/cm ³ | 1.16 |
| Water absorption | 24 hr, 23°C | ISO 62 | % | 1.1 |
| Molding shrinkage, parallel | | ISO 294-4, 2577 | % | 0.7 - 0.9 |
| Molding shrinkage, normal | | ISO 294-4, 2577 | % | 0.6 - 0.8 |

Mechanical properties

| | | | | dam / cond.* |
|---------------------------------------|----------|--------------|-------------------|--------------|
| Tensile modulus | 1 mm/min | ISO 527-1/-2 | MPa | 3500 / 1250 |
| Stress at break | | ISO 527-1/-2 | MPa | 60 / 45 |
| Strain at break | | ISO 527-1/-2 | % | 10 / 250 |
| Yield stress | | ISO 527-1/-2 | MPa | 85 / 40 |
| Yield strain | | ISO 527-1/-2 | % | 4 / 25 |
| Charpy notched impact strength, +23°C | +23°C | ISO 179/1eA | kJ/m ² | 3.5 / 14 |

TECHNICAL DATA SHEET


TECHNYL PROTECT C 50H2 NC

| | Condition | Standard | Unit | Value |
|--|--------------|-------------|------|-------|
| Thermal properties | | | | |
| Melting temperature, 10°C/min | | ISO 11357-1 | °C | 222 |
| Temp. of deflection under load, 0.45 MPa | 0.45 MPa | ISO 75 | °C | 180 |
| Temp. of deflection under load, 1.80 MPa | 1.80 MPa | ISO 75 | °C | 75 |
| Vicat softening temperature | 50°C/h - 50N | ISO 306 | °C | 205 |

Electrical properties

| | | | | |
|--------------------------------|------------|---------------|-------|--------|
| Volume resistivity | | IEC 62631-3-1 | ohm.m | 1E+013 |
| Surface resistivity | | IEC 62631-3-1 | ohm | 1E+015 |
| 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 | 34 |

Burning behaviour

| | | | | |
|--|--|----------------|----|------|
| UL Yellow Card availability  | Click here to have access to the UL Yellow Card → QMfZ2.E44716 | | | |
| Flammability, 0.40 mm | 0.40 mm | UL 94 | | V0 |
| Glow-wire flammability index, GWFI, 0.75 mm | 0.75 mm | IEC 60695-2-12 | °C | 960 |
| Glow-wire flammability index, GWFI, 1.5 mm | 1.5 mm | IEC 60695-2-12 | °C | 960 |
| Glow-wire flammability index, GWFI, 3.0 mm | 3.0 mm | IEC 60695-2-12 | °C | 960 |
| Glow-wire ignition temperature, GWIT, 0.75 mm | 0.75 mm | IEC 60695-2-13 | °C | 700 |
| Glow-wire ignition temperature, GWIT, 1.5 mm | 1.5 mm | IEC 60695-2-13 | °C | 700 |
| Glow-wire ignition temperature, GWIT, 3.0 mm | 3.0 mm | IEC 60695-2-13 | °C | 700 |
| Oxygen index | | | % | 36 |
| Burning rate, FMVSS, Thickness 1 mm | | FMVSS 302 | | <100 |

*: conditioned according to ISO 1110

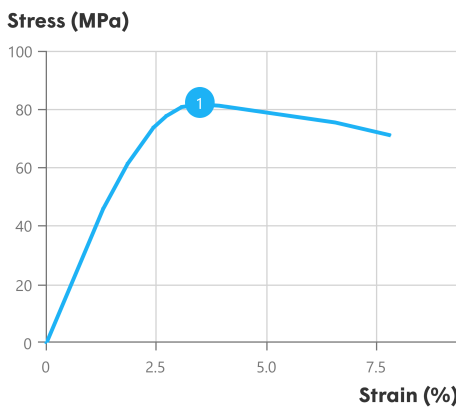
TECHNICAL DATA SHEET

TECHNYL PROTECT C 50H2 NC

Processing conditions

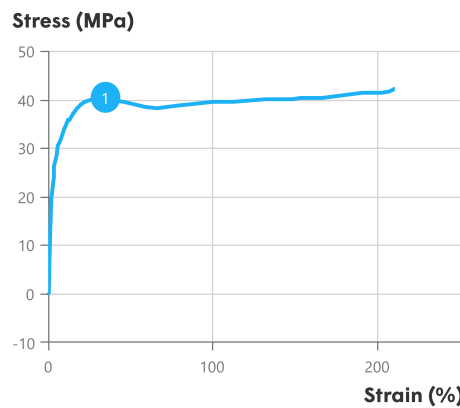
| | |
|-------------------------------|--------------|
| Drying temperature/time | 80 °C |
| Suggested max moisture | 0.2 % |
| Rear temperature | 230 - 235 °C |
| Middle temperature | 235 - 240 °C |
| Front temperature | 235 - 245 °C |
| Recommended mould temperature | 60 - 90 °C |

Stress-strain, dry



| Temperature (°C) | |
|------------------|----------|
| 1 | Spannung |
| | 1 |

Stress-strain, conditioned



| Temperature (°C) | |
|------------------|----------|
| 1 | Spannung |
| | 1 |

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

All reinforced, flame retardant compounds generate some level of abrasion/corrosion to the steel processing equipment. These issues may be magnified by using incorrect processing conditions (temperatures, residence time, moisture level ...) during the moulding process. Therefore, Domo recommends you adhere to the processing conditions detailed in this technical data sheet. For equipment that comes into contact with molten flame retardant compounds, Domo advises you to use a steel with high chromium and high carbon content (having a minimum concentration of 16% chromium) to prevent corrosion and abrasion. For the correct reference of steel associated to flame retardant compounds' processing, please refer to your equipment manufacturers. 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 provided in this documentation corresponds to our technical knowledge at the date of its publication and do not constitute a specification. This information may be subject to revision at our discretion. Domo cannot anticipate all conditions under which this information and our products of other manufactures in combination with our products may be used. Domo accepts no responsibility for results obtained by the application of this information or for the safety and suitability of our products alone or in combination with other products. Users are advised to make their own tests to determine the safety and suitability of each product or product combination for their own purposes. Unless otherwise agreed in writing, Domo sells the product without warranties. Buyers and users assume all responsibility and liability for loss or damage arising from handling and use of our products, whether used alone or in combination with other products. Unless specifically indicated, the grades mentioned are not suitable for applications in the pharmaceutical/medical sector.