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TECHNICAL DATA SHEET

# TECHNYL PROTECT A 21T3 V25 BK 15N

## TECHNYL A 21T3 V25 BLACK 15N

TECHNYL PROTECT A 21T3 V25 BK 15N is a Red Phosphorous flame retardant polyamide 66, reinforced with 25% of glass fibre, heat stabilized, impact improved, for injection moulding. This flame retardant grade offers excellent filling qualities and with good mechanical properties. This grade is stabilized to offer a very low migration and corrosion of metallic contacts.

### General

| | | |
|---|---|---|
| Polymer type | PA66 | |
| Certifications | RoHS<br>EC 1907/2006 (REACH) | UL listed product |
| Feature | impact resistant(obs) | |
| Applications | electrical/electronic applications | |
| Colors available | black | |
| Forms | pellets | |
| Processing technology | injection moulding | |

### Product identification

| | |
|---|---|
| ISO 1043 abbreviation | PA66-GF25 FR(52) |

### Physical properties

| | Condition | Standard | Unit | Value |
|---|---|---|---|---|
| Density | | ISO 1183 | g/cm³ | 1.31 |
| Water absorption | 24 hr, 23°C | ISO 62 | % | 0.9 |

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| | Condition | Standard | Unit | Value |
|---|---|---|---|---|
| **Mechanical properties** | | | | **dam / cond.*** |
| Tensile modulus | 1 mm/min | ISO 527-1/-2 | MPa | 8000 / 5400 |
| Stress at break | | ISO 527-1/-2 | MPa | 130 / 70 |
| Strain at break | | ISO 527-1/-2 | % | 2.7 / 4 |
| Flexural modulus, ISO 178 | 2 mm/min | ISO 178 | MPa | 7900 / 5200 |
| Flexural strength, ISO 178 | 2 mm/min | ISO 178 | MPa | 200 / 155 |
| Charpy impact strength, +23°C | +23°C | ISO 179/1eU | kJ/m² | 57 / 65 |
| Charpy impact strength, -30°C | -30°C | ISO 179/1eU | kJ/m² | 60 / - |
| Charpy notched impact strength, +23°C | +23°C | ISO 179/1eA | kJ/m² | 7 / 9 |
| Charpy notched impact strength, -30°C | -30°C | ISO 179/1eA | kJ/m² | 6 / - |

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

| | Condition | Standard | Unit | Value |
|---|---|---|---|---|
| **Thermal properties** | | | | |
| Melting temperature, 10°C/min | | ISO 11357-1 | °C | 263 |
| Temp. of deflection under load, 1.80 MPa | 1.80 MPa | ISO 75 | °C | 230 |

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## Burning behaviour

| | Condition | Standard | Unit | Value |
|---|---|---|---|---|
| Flammability, 0.75 mm | 0.75 mm | UL 94 | | V2 |
| Flammability, 1.5 mm | 1.5 mm | UL 94 | | V0 |
| Flammability, 3.0 mm | 3.0 mm | UL 94 | | V2 |
| 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 | | | °C | 930 |
| Glow-wire ignition temperature, GWIT, 1.5 mm | 1.5 mm | IEC 60695-2-13 | °C | 725 |
| Glow-wire ignition temperature, GWIT, 3.0 mm | 3.0 mm | IEC 60695-2-13 | °C | 800 |
| Oxygen index | | | % | 28.0 |

## Electrical properties

| | Condition | Standard | Unit | Value |
|---|---|---|---|---|
| Comparative tracking index | Solution A | IEC 60112 | V | 500.0 |
| CTI performance level category | | Sol A | | PLC 1 |
| Dielectric strength | 1 mm | IEC 60243-1 | kV/mm | 37.0 |

## Processing conditions

| | |
|---|---|
| Drying temperature/time | 80 °C |
| Suggested max moisture | 0.2 % |
| Rear temperature | 265 - 275 °C |
| Middle temperature | 270 - 280 °C |
| Front temperature | 280 - 290 °C |
| Recommended mould temperature | 60 - 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 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.