

TECHNICAL DATA SHEET

**TECHNYL PROTECT C 50H3 NC XB**  
**DOMAMID FR 6V0M1**



Polyamide 6, heat-aging stabilized, halogen and red phosphorus free flame retardant, for injection moulding, natural color

**General**

Certifications	RoHS	UL listed product
Polymer type	PA6	
Feature	halogen and red phosphorus free flame retardant UL 94 V0	heat-aging stabilized
Processing technology	injection moulding	

**Product identification**

ISO 1043 abbreviation	PA6 FR(30)
ISO 16396 designation	PA6,FR(30),MH,S14-030

Condition	Standard	Unit	Value
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**Physical properties**

Condition	Standard	Unit	Value
Density	ISO 1183	g/cm <sup>3</sup>	1.16
Humidity absorption	T=23°C, 50% RH	%	2.85 - 2.95
Water absorption	24 hr, 23°C	%	1.1
Molding shrinkage, parallel	ISO 294-4, 2577	%	0.9 - 1.1
Molding shrinkage, normal	ISO 294-4, 2577	%	0.9 - 1.1

	Condition	Standard	Unit	Value
<b>Mechanical properties</b>				<b>dam / cond.*</b>
Tensile modulus	1 mm/min	ISO 527-1/-2	MPa	3500 / 1500
Strain at break	50 mm/min	ISO 527-1/-2	%	12 / 50
Yield stress	50 mm/min	ISO 527-1/-2	MPa	80 / 40
Flexural modulus, ISO 178	2 mm/min	ISO 178	MPa	3200 / 1300
Flexural strength, ISO 178	2 mm/min	ISO 178	MPa	120 / 50
Charpy impact strength, +23°C	+23°C	ISO 179/1eU	kJ/m <sup>2</sup>	75 / NB
Charpy notched impact strength, +23°C	+23°C	ISO 179/1eA	kJ/m <sup>2</sup>	4 / 9.5
Charpy notched impact strength, -30°C	-30°C	ISO 179/1eA	kJ/m <sup>2</sup>	3.5 / -
Izod impact strength, +23°C	+23°C	ISO 180/1U	kJ/m <sup>2</sup>	65 / NB
Izod notched impact strength, +23°C	+23°C	ISO 180/1A	kJ/m <sup>2</sup>	3.5 / 9

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

	Condition	Standard	Unit	Value
<b>Thermal properties</b>				
Melting temperature, 10°C/min		ISO 11357-1	°C	221
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	70
Vicat softening temperature	50°C/h - 50N	ISO 306	°C	205

Condition	Standard	Unit	Value
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### Burning behaviour

UL Yellow Card availability 1	<b><a href="#">Click here to have access to the UL Yellow Card availability 1 -&gt; E170540-100355951</a></b>			
Flammability, 0.75 mm	0.75 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	750
Burning rate, FMVSS, Thickness 1 mm		FMVSS 302		< 100 mm/min

Condition	Standard	Unit	Value
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### Electrical properties

Volume resistivity		IEC 62631-3-1	ohm.m	1.0E16
Surface resistivity		IEC 62631-3-1	ohm	1.0E14
Comparative tracking index	Solution A	IEC 60112	V	600.0
CTI performance level category		Sol A		PLC 0

### Processing conditions

Drying temperature/time	75-85°C / 2-4h (with dew point of dried air < -30 °C)
Recommended melt temperature	230 - 250 °C
Recommended mould temperature	60 - 80 °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.