

TECHNYL® PROTECT

Flame retardants

TECHNICAL DATA SHEET

TECHNYL PROTECT C 60G1 V30 BK

(Previously DOMAMID FR 6G30V0E BK)

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

General

Feature	UL VO Heat-aging stabilized	Halogen and red phosphorus free flame retardant
Polymer type	PA6 (Polyamide 6)	
Processing technology	Injection molding	
Certification	RoHS EC 1907/2006 (REACH)	UL-Yellow Card
Colors available	Black 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
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Physical properties

Density		ISO 1183	g/cm ³	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% H ₂ SO ₄	ISO 307	cm ³ /g	145

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	Condition	Standard	Unit	Value dam / cond.*
Mechanical properties				
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 ²	50 / 55
Charpy impact strength, -30°C	-30°C	ISO 179/1eU	kJ/m ²	45 / 45
Charpy notched impact strength, +23°C	+23°C	ISO 179/1eA	kJ/m ²	8 / 11
Charpy notched impact strength, -30°C	-30°C	ISO 179/1eA	kJ/m ²	7 / 8
Izod impact strength, +23°C	+23°C	ISO 180/1U	kJ/m ²	45 / 50
Izod notched impact strength, +23°C	+23°C	ISO 180/1A	kJ/m ²	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 → E170540-103930220			
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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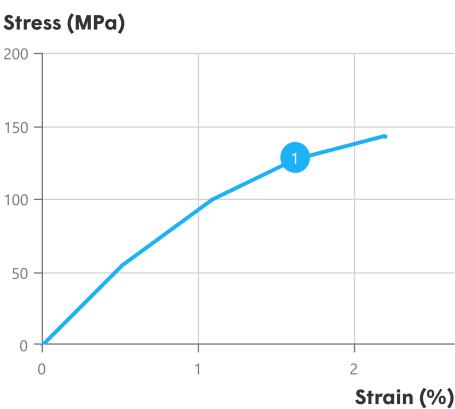
*: conditioned according to ISO 1110

Processing conditions

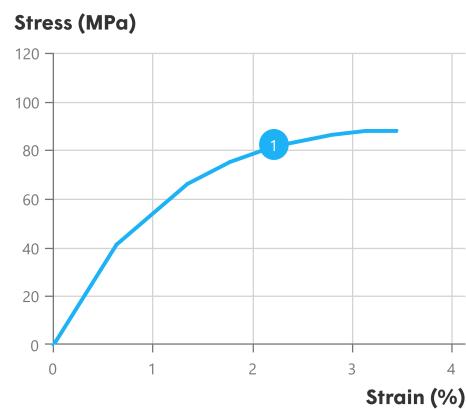
Drying temperature/time	75-85°C / 2-4h (with dew point of dried air < -30 °C)
Recommended melt temperature	240 - 270 °C
Recommended mould temperature	80 - 100 °C

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



Stress-strain, conditioned



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

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