TECHNYL® PROTECT
Flame retardants

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TECHNICAL DATA SHEET

TECHNYL PROTECT C 60G1 V20 BK

DOMAMID FR 6G20V0E

Polyamide 6, 20% glass fiber reinforced, halogen and red phosphorus free flame retardant, heat-aging stabilized, for injection moulding

General

Polymer type	PA6	
Certifications	RoHS EC 1907/2006 (REACH)	UL listed product
Feature	halogen and red phosphorus free flame retardant UL 94 V0	heat-aging stabilized
Applications	electrical/electronic applications	
Colors available	black	
Processing technology	injection moulding	

Product identification

ISO 1043 abbreviation	PA6-GF20 FR(40)
ISO 16396 designation	PA6,GF20FR(40),MH,S14-080

Physical properties

	Condition	Standard	Unit	Value
Density		ISO 1183	g/cm³	1.32
Molding shrinkage, parallel		ISO 294-4, 2577	%	0.3 - 0.5
Molding shrinkage, normal		ISO 294-4, 2577	%	0.5 - 0.7
Viscosity number	96% H2SO4	ISO 307	cm³/g	145.0

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	Condition	Standard	Unit	Value
Mechanical properties				**dam / cond.***
Tensile modulus	1 mm/min	ISO 527-1/-2	MPa	7700 / -
Stress at break	5 mm/min	ISO 527-1/-2	MPa	120 / -
Strain at break	5 mm/min	ISO 527-1/-2	%	3.5 / -
Flexural modulus, ISO 178	2 mm/min	ISO 178	MPa	7000 / -
Flexural strength, ISO 178	2 mm/min	ISO 178	MPa	170 / -
Charpy impact strength, +23°C	+23°C	ISO 179/1eU	kJ/m²	45 / -
Charpy notched impact strength, +23°C	+23°C	ISO 179/1eA	kJ/m²	7.5 / -
Izod impact strength, +23°C	+23°C	ISO 180/1U	kJ/m²	40 / -
Izod notched impact strength, +23°C	+23°C	ISO 180/1A	kJ/m²	7 / -

: conditioned according to ISO 1110

	Condition	Standard	Unit	Value
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	210
Temp. of deflection under load, 1.80 MPa	1.80 MPa	ISO 75	°C	195
Vicat softening temperature	50°C/h - 50N	ISO 306	°C	205

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Burning behaviour

	Condition	Standard	Unit	Value
UL Yellow Card availability 1		**Click here to have access to the UL Yellow Card availability 1 -> E170540-532327**		
Flammability, 0.75 mm	0.75 mm	UL 94		V0
Glow-wire flammability index, GWFI, 3.0 mm			°C	960
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

Electrical properties

	Condition	Standard	Unit	Value
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)
Suggested max moisture	0.2 %
Recommended melt temperature	240 - 270 °C
Recommended mould temperature	80 - 100 °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

DOMO Engineering Plastics

Injection advice

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.