TECHNYL® PROTECT
Flame retardants

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TECHNICAL DATA SHEET

TECHNYL PROTECT C 60G1 V30 BK R9005

DOMAMID FR 6G30V0E BKR9005

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

General

Polymer type	PA6	
Certifications	RoHS EC 1907/2006 (REACH)	UL listed product
Feature	halogen and red phosphorus free flame retardant excellent surface finish very high flow	UL 94 V0 heat resistant
Applications	electrical/electronic applications	
Colors available	black	
Forms	pellets	
Processing technology	injection moulding	

Product identification

ISO 1043 abbreviation	PA6-GF30 FR(40)
ISO 16396 designation	PA6,GF30FR(40),MH,S14-110

Physical properties

	Condition	Standard	Unit	Value
Density		ISO 1183	g/cm³	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% 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	11000 / 7000
Stress at break		ISO 527-1/-2	MPa	140 / 95
Strain at break		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/m²	50 / 55
Charpy impact strength, -30°C	-30°C	ISO 179/1eU	kJ/m²	45 / -
Charpy notched impact strength, +23°C	+23°C	ISO 179/1eA	kJ/m²	8 / 11
Charpy notched impact strength, -30°C	-30°C	ISO 179/1eA	kJ/m²	8 / -
Izod impact strength, +23°C	+23°C	ISO 180/1U	kJ/m²	45 / 50
Izod notched impact strength, +23°C	+23°C	ISO 180/1A	kJ/m²	8 / 10

: 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	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

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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 -> E170540-103930220**			
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, 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	775
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
Dielectric strength	1 mm	IEC 60243-1	kV/mm	31.0

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, recommended water content maximum 0,15% (optimum 0,08%-0,12%)

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.