

TECHNICAL DATA SHEET

**TECHNYL PROTECT C 52G1 V20 GY R7035 CF**  
**TECHNYL C 52G1 V20 GREY R7035 CF**



TECHNYL PROTECT C 52G1 V20 GY R7035 CF is a polyamide 6 based on a non-phosphorous and non-halogenated flame retardant system, reinforced with 20% of glass fiber, heat stabilized, for injection moulding. This is a flame retardant grade with excellent moulding and electrical performance.

**General**

Polymer type	PA6		
Certifications	UL listed product EN 45545	EC 1907/2006 (REACH)	
Feature	flame retarded halogen free flame retardant	UL 94 V2 UV-laser markable	
Applications	electrical/electronic applications		
Colors available	grey	white	
Forms	pellets		
Processing technology	injection moulding		

**Product identification**

ISO 1043 abbreviation	PA6-GF20 FR(30)
ISO 16396 designation	PA6,GF20 FR(30),MH,S14-050

Condition	Standard	Unit	Value
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**Physical properties**

Property	Condition	Standard	Unit	Value
Density		ISO 1183	g/cm <sup>3</sup>	1.28
Humidity absorption	T=23°C, 50% RH	ISO 62	%	1.1
Water absorption	24 hr, 23°C	ISO 62	%	1.1 - 1.2
Water absorption, saturation			%	6.0
Molding shrinkage, parallel		ISO 294-4, 2577	%	0.3 - 0.5
Molding shrinkage, normal		ISO 294-4, 2577	%	0.7 - 0.9

	Condition	Standard	Unit	Value
<b>Mechanical properties</b>				<b>dam / cond.*</b>
Tensile modulus	1 mm/min	ISO 527-1/-2	MPa	5700 / 2000
Stress at break		ISO 527-1/-2	MPa	75 / 37
Strain at break		ISO 527-1/-2	%	3 / 100
Flexural modulus, ISO 178	2 mm/min	ISO 178	MPa	5000 / 1800
Flexural strength, ISO 178	2 mm/min	ISO 178	MPa	120 / 55
Charpy impact strength, +23°C	+23°C	ISO 179/1eU	kJ/m <sup>2</sup>	40 / 100
Charpy impact strength, -30°C	-30°C	ISO 179/1eU	kJ/m <sup>2</sup>	38 / -
Charpy notched impact strength, +23°C	+23°C	ISO 179/1eA	kJ/m <sup>2</sup>	6 / 6.5
Charpy notched impact strength, -30°C	-30°C	ISO 179/1eA	kJ/m <sup>2</sup>	2.5 / -
Charpy notched impact strength		ISO 179/1eA	kJ/m <sup>2</sup>	3 / 6.5

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

	Condition	Standard	Unit	Value
<b>Thermal properties</b>				
Melting temperature, 10°C/min		ISO 11357-1	°C	220
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	170

Condition	Standard	Unit	Value
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### Burning behaviour

UL Yellow Card availability 1	<a href="#"><b>Click here to have access to the UL Yellow Card availability 1 -&gt; QMFZ2.E44716</b></a>			
Flammability, 0.75 mm	0.75 mm	UL 94		V2
Flammability, 1.5 mm	1.5 mm	UL 94		V2
Flammability, 3.0 mm	3.0 mm	UL 94		V2
Glow-wire flammability index, GWFI, 0.75 mm	0.75 mm	IEC 60695-2-12	°C	960
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	960
Oxygen index			%	29.0
Burning rate, FMVSS, Thickness 1 mm		FMVSS 302		<100 mm/min

Condition	Standard	Unit	Value
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### Electrical properties

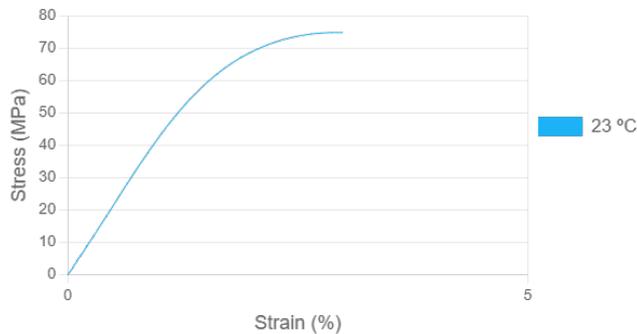
Comparative tracking index	Solution A	IEC 60112	V	500.0
CTI performance level category		Sol A		PLC 1
Dielectric strength	1 mm	IEC 60243-1	kV/mm	31.0

### Processing conditions

Drying temperature/time	80 °C
Suggested max moisture	0.12 %
Rear temperature	230 - 235 °C
Middle temperature	235 - 240 °C
Front temperature	240 - 250 °C
Recommended mould temperature	60 - 90 °C

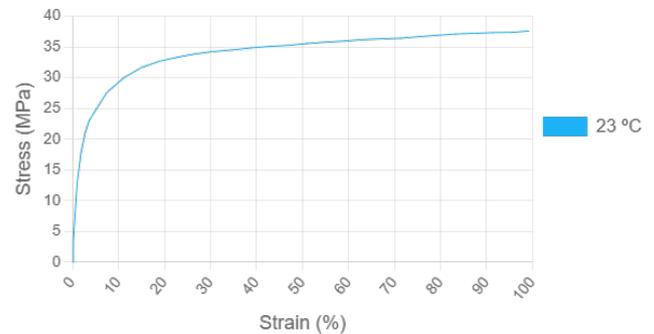
**Stress-strain, dry**

Temperature (°C)



**Stress-strain, conditioned**

Temperature (°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.