TECHNYL® PROTECT
Flame retardants

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TECHNICAL DATA SHEET

TECHNYL PROTECT AT 20 V25 BK

TECHNYL AT 20 V25 BLACK

TECHNYL PROTECT AT 20 V25 BK is a Red Phosphorous flame retardant grade reinforced with 25% of glass fiber, heat stabilized, for injection moulding. This grade offers UL94V V-0 at 0.8mm and CTI 600 V associated with good mechanical properties.

General

Certifications	RoHS EC 1907/2006 (REACH)	UL listed product
Polymer type	PA66 + PET blend	
Feature	heat-aging stabilized UL 94 V0 good surface finish	red phosphorous flame retardant corrosion resistant GWFI 960°C
Applications	electrical/electronic applications	
Colors available	black grey	natural
Forms	pellets	
Processing technology	injection moulding	

Product identification

ISO 1043 abbreviation	PA66+PET-GF25 FR(52)
ISO 16396 designation	PA66+PET,GF25FR(52),MH,S14-090

Physical properties

	Condition	Standard	Unit	Value
Density		ISO 1183	g/cm³	1.39
Humidity absorption	T=23°C, 50% RH	ISO 62	%	1.5 - 1.6
Water absorption	24 hr, 23°C	ISO 62	%	0.65 - 0.75
Molding shrinkage, parallel		ISO 294-4, 2577	%	0.3
Molding shrinkage, normal		ISO 294-4, 2577	%	1.0

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	Condition	Standard	Unit	Value
Mechanical properties				**dam / cond.***
Tensile modulus	1 mm/min	ISO 527-1/-2	MPa	9200 / 7200
Stress at break		ISO 527-1/-2	MPa	150 / 115
Strain at break		ISO 527-1/-2	%	2.3 / 2.8
Flexural modulus, ISO 178	2 mm/min	ISO 178	MPa	6900 / 4600
Flexural strength, ISO 178	2 mm/min	ISO 178	MPa	205 / 150
Charpy impact strength, +23°C	+23°C	ISO 179/1eU	kJ/m²	40 / 50
Charpy impact strength, -30°C	-30°C	ISO 179/1eU	kJ/m²	35 / -
Charpy notched impact strength, +23°C	+23°C	ISO 179/1eA	kJ/m²	7.5 / 13
Charpy notched impact strength, -30°C	-30°C	ISO 179/1eA	kJ/m²	7.1 / -
Izod impact strength, +23°C	+23°C	ISO 180/1U	kJ/m²	36 / -
Izod notched impact strength, +23°C	+23°C	ISO 180/1A	kJ/m²	7.2 / -

: conditioned according to ISO 1110

	Condition	Standard	Unit	Value
Thermal properties				
Melting temperature, 10°C/min		ISO 11357-1	°C	260
Temp. of deflection under load, 1.80 MPa	1.80 MPa	ISO 75	°C	240

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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 -> QMFZ2.E44716**		
Flammability, 0.75 mm	0.75 mm	UL 94		V0
Flammability, 1.5 mm	1.5 mm	UL 94		V0,5VA
Flammability, 3.0 mm	3.0 mm	UL 94		V0,5VA
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
Glow-wire ignition temperature, GWIT, 0.75 mm	0.75 mm	IEC 60695-2-13	°C	775
Glow-wire ignition temperature, GWIT, 1.5 mm	1.5 mm	IEC 60695-2-13	°C	775
Glow-wire ignition temperature, GWIT, 3.0 mm	3.0 mm	IEC 60695-2-13	°C	850
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	4.0E12
Surface resistivity		IEC 62631-3-1	ohm	1.6E15
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	35.0

Processing conditions

Drying temperature/time	80 to 100 °C / 4 h
Suggested max moisture	0.1 %
Rear temperature	270 - 280 °C

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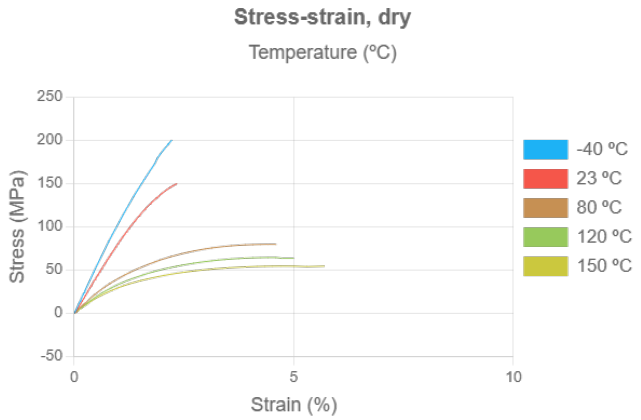
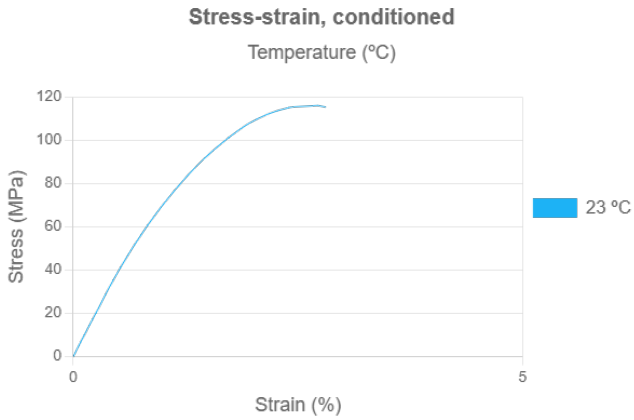
Processing conditions

Middle temperature	275 - 285 °C
Front temperature	280 - 290 °C
Recommended melt temperature	270 - 290 °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 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.