

# TECHNYL® PROTECT

Flame retardants

## TECHNICAL DATA SHEET

### TECHNYL PROTECT A 50X1 GY 2607

(Previously TECHNYL A 50X1 GREY 2607)

TECHNYL PROTECT A 50X1 GY 2607 is an unreinforced blend of polyamide 66 and 6 based on a non-phosphorous and non-halogenated flame retardant system, heat stabilized, for injection moulding. This flame retardant grade, UL94 V0 at 0.4mm, offers excellent filling qualities together with good stiffness.

#### General

Feature	halogen free flame retardant	
Polymer type	(PA66 + PA6) blend	
Processing technology	Injection molding	
Certification	RoHS EC 1907/2006 (REACH)	UL-Yellow Card European Railways Certifications EN 45545-2
Applications	Connectors	Electrical/Electronic Applications
Colors available	Natural	Grey
Forms	Pellets	

#### Product identification

ISO 1043 abbreviation	PA66+PA6 FR(30)
ISO 16396 designation	PA66,FR(30),M1,S14-040

Condition	Standard	Unit	Value
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#### Physical properties

Density		ISO 1183	g/cm <sup>3</sup>	1.16
Humidity absorption	T=23°C, 50% RH	ISO 62	%	2.7
Water absorption	24 hr, 23°C	ISO 62	%	1
Molding shrinkage, parallel		ISO 294-4, 2577	%	0.95 - 1.05
Molding shrinkage, normal		ISO 294-4, 2577	%	0.7 - 0.8

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	Condition	Standard	Unit	Value dam / cond.*
<b>Mechanical properties</b>				
Tensile modulus	1 mm/min	ISO 527-1/-2	MPa	3700 / 1300
Stress at break		ISO 527-1/-2	MPa	70 / 50
Strain at break		ISO 527-1/-2	%	15 / 150
Yield stress		ISO 527-1/-2	MPa	75 / 50
Yield strain		ISO 527-1/-2	%	4 / -
Flexural modulus, ISO 178	2 mm/min	ISO 178	MPa	3200 / 1100
Flexural strength, ISO 178	2 mm/min	ISO 178	MPa	105 / 50
Charpy impact strength, +23°C	+23°C	ISO 179/1eU	kJ/m²	80 / -
Charpy notched impact strength, +23°C	+23°C	ISO 179/1eA	kJ/m²	4 / 14
Charpy notched impact strength, -30°C	-30°C	ISO 179/1eA	kJ/m²	3.5 / -
<b>Thermal properties</b>				
Melting temperature, 10°C/min		ISO 11357-1	°C	257
Temp. of deflection under load, 0.45 MPa	0.45 MPa	ISO 75	°C	200
Temp. of deflection under load, 1.80 MPa	1.80 MPa	ISO 75	°C	60
<b>Electrical properties</b>				
Volume resistivity		IEC 62631-3-1	ohm.m	1E+013
Surface resistivity		IEC 62631-3-1	ohm	1E+015
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	34

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	Condition	Standard	Unit	Value
<b>Burning behaviour</b>				
UL Yellow Card availability 		Click here to have access to the UL Yellow Card → <a href="#">QMFZ2.E44716</a>		
Flammability, 0.40 mm	0.40 mm	UL 94		V0
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, 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	3.0 mm	IEC 60695-2-12	°C	960
Glow-wire ignition temperature, GWIT, 0.40 mm	0.40 mm	IEC 60695-2-13	°C	960
Glow-wire ignition temperature, GWIT, 0.75 mm	0.75 mm	IEC 60695-2-13	°C	930
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	750
Oxygen index			%	33
Burning rate, FMVSS, Thickness 1 mm		FMVSS 302		<100

\*: conditioned according to ISO 1110

### Processing conditions

Drying temperature/time	75-85°C / 2-4h (with dew point of dried air < -30 °C)
Suggested max moisture	0.12 %
Rear temperature	260 - 270 °C
Middle temperature	265 - 275 °C
Front temperature	265 - 275 °C
Recommended mould temperature	60 - 80 °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.

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#### 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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