

TECHNICAL DATA SHEET

TECHNYL PROTECT A 31H1 MX35 GY 174N
(Previously TECHNYL A 31H1 MX35 GREY 174N)

TECHNYL A 31H1 MX35 GREY 174N is a flame-retardant polyamide 66 reinforces with 35% of mineral filler, for injection moulding. This grade offers excellent flame retardancy properties (UL94, GWIT) combined with excellent processing, mechanical and electrical performance.

General

Feature	Flame retarded	Heat-aging stabilized
Polymer type	PA66 (Polyamide 66)	
Processing technology	Injection molding	
Certification	RoHS EC 1907/2006 (REACH)	UL-Yellow Card
Applications	Electrical/Electronic Applications	
Colors available	Grey	
Forms	Pellets	

Product identification

ISO 1043 abbreviation	PA66-MD35 FR(17)
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Condition	Standard	Unit	Value
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Physical properties

	Condition	Standard	Unit	Value
Density		ISO 1183	g/cm ³	1.65
Humidity absorption	T=23°C, 50% RH	ISO 62	%	0.35
Molding shrinkage, parallel		ISO 294-4, 2577	%	0.55
Molding shrinkage, normal		ISO 294-4, 2577	%	0.4

Mechanical properties

dam / cond.*

	Condition	Standard	Unit	Value
Tensile modulus	1mm/min	ISO 527-1/-2	MPa	10000 / 6700
Stress at break	5mm/min	ISO 527-1/-2	MPa	70 / 50
Strain at break	5mm/min	ISO 527-1/-2	%	1.2 / 1.6
Flexural modulus, ISO 178	2 mm/min	ISO 178	MPa	9000 / 6000
Flexural strength, ISO 178	2 mm/min	ISO 178	MPa	110 / 75
Charpy impact strength, +23°C	+23°C	ISO 179/1eU	kJ/m ²	18 / 22
Charpy impact strength, -30°C	-30°C	ISO 179/1eU	kJ/m ²	21 / -
Charpy notched impact strength, +23°C	+23°C	ISO 179/1eA	kJ/m ²	1.6 / -

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	Condition	Standard	Unit	Value
Thermal properties				
Melting temperature, 10°C/min		ISO 11357-1	°C	263
Temp. of deflection under load, 1.80 MPa	1.80 MPa	ISO 75	°C	180

Electrical properties

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	42

Burning behaviour

UL Yellow Card availability 	Click here to have access to the UL Yellow Card → QMFZ2.E44716			
Flammability, 0.75 mm	0.75 mm	UL 94		V2
Flammability, 1.5 mm	1.5 mm	UL 94		V1
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, 1.5 mm	1.5 mm	IEC 60695-2-13	°C	775
Oxygen index			%	45

*: conditioned according to ISO 1110

Processing conditions

Drying temperature/time	80°C
Suggested max moisture	0.2 %
Rear temperature	265 - 275 °C
Middle temperature	270 - 280 °C
Front temperature	280 - 290 °C
Recommended mould temperature	60 - 90 °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.

Disclaimer

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