

FRIANYL® XT4 GF30 V0I - PPA

Description

PPA compound, 30% glass fiber reinforced, heat stabilized, halogens free. UL listed V0@0.4mm.

Specifically designed for electrical and electronic applications that require high thermal, peak and continuous resistance together with compliance with the most stringent safety requirements, this compound is also easy to process with excellent aesthetic results.

Suitable for components that need to withstand the reflow soldering process (SMT).

Physical properties	Value	Unit	Test Standard
Density	89.3	lb/ft ³	ISO 1183
Molding shrinkage, parallel (flow)	0.1 - 0.5	%	ISO 294-4, 2577
Molding shrinkage, transverse normal	0.5 - 0.9	%	ISO 294-4, 2577
Water absorption, 23°C-sat	3	%	Sim. to ISO 62
Humidity absorption, 23°C/50%RH	0.9	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	1.58E6/-	psi	ISO 527-1, -2
Tensile stress at break, 5mm/min	22500/-	psi	ISO 527-1, -2
Tensile strain at break, 5mm/min	2.1/-	%	ISO 527-1, -2
Charpy impact strength, 23°C	21.4/-	ft-lb/in ²	ISO 179/1eU
Charpy impact strength, -30°C	19/-	ft-lb/in ²	ISO 179/1eU
Charpy notched impact strength, 23°C	4.42/-	ft-lb/in ²	ISO 179/1eA
Charpy notched impact strength, -30°C	4.38/-	ft-lb/in ²	ISO 179/1eA
Ball indentation hardness, 30s	37000	psi	ISO 2039-1

Thermal properties	Value	Unit	Test Standard
Melting temperature, 20°C/min	617	°F	ISO 11357-1/-3
DTUL at 1.8 MPa	554	°F	ISO 75-1, -2
FMVSS	SE	-	ISO 3795 (FMVSS 302)
Flammability @3.2mm nom. thickn.	V-0	class	UL 94
Flammability @1.6mm nom. thickn.	V-0	class	UL 94
Flammability @0.8mm nom. thickn.	V-0	class	UL 94
Flammability @0.4mm nom. thickn.	V-0	class	UL 94
Continuous service temperature	140	°C	DIN/IEC 60216-1
Glow wire ignition temperature, 0.8 mm	1470	°F	IEC 60695-2-13
Glow wire ignition temperature, 3.2 mm	1610	°F	IEC 60695-2-13
Glow wire flammability index, 0.8 mm	1760	°F	IEC 60695-2-12
Glow wire flammability index, 3.2 mm	1760	°F	IEC 60695-2-12
RTI - electrical @ 0.4mm nom. Thickn.	140	°C	UL 746B
RTI - electrical @ 0.8mm nom. Thickn.	140	°C	UL 746B
RTI - electrical @ 1.6mm nom. Thickn.	140	°C	UL 746B
RTI - electrical @ 3.2mm nom. Thickn.	140	°C	UL 746B
RTI - impact @ 0.4mm nom. Thickn.	115	°C	UL 746B
RTI - impact @ 0.8mm nom. Thickn.	115	°C	UL 746B
RTI - impact @ 1.6mm nom. Thickn.	120	°C	UL 746B
RTI - impact @ 3.2mm nom. Thickn.	125	°C	UL 746B
RTI - str @ 0.4mm nom. Thickn.	115	°C	UL 746B
RTI - str @ 0.8mm nom. Thickn.	115	°C	UL 746B
RTI - str @ 1.6mm nom. Thickn.	120	°C	UL 746B
RTI - str @ 3.2mm nom. Thickn.	120	°C	UL 746B

Electrical properties	Value	Unit	Test Standard
Volume resistivity, 23°C	>1E13/-	Ohm*m	IEC 62631-3-1
Surface resistivity, 23°C	>1E15/-	Ohm	IEC 62631-3-2
Electric strength, 23°C (AC)	1020/-	kV/in	IEC 60243-1
Comparative tracking index	PLC 0/-	-	UL 746
Comparative tracking index	Group I	-	IEC 60112



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CTI 50 drops	600	V	IEC 60112
CTI 100 drops	600	V	IEC 60112
Hot wire ignition @ 0.4mm nom. thickn.	PLC 4	class	UL 746A
Hot wire ignition @ 0.8mm nom. thickn.	PLC 1	class	UL 746A
Hot wire ignition @ 1.6mm nom. thickn.	PLC 0	class	UL 746A
Hot wire ignition @ 3.2mm nom. thickn.	PLC 0	class	UL 746A
High ampere arc ignition @ 0.4mm nom. thickn.	PLC 2	class	UL 746A
High ampere arc ignition @ 0.8mm nom. thickn.	PLC 2	class	UL 746A
High ampere arc ignition @ 1.6mm nom. thickn.	PLC 1	class	UL 746A
High ampere arc ignition @ 3.2mm nom. thickn.	PLC 1	class	UL 746A

VDA Properties

	Value	Unit
FMVSS	SE	ISO 3795 (FMVSS 302)

Other text information

Injection Molding Preprocessing

FRIANYL XT4 compound is supplied in moisture-proof packaging. The maximum moisture content allowed for the process of injection molding is 0.10%, but to get the maximum performance and reduce possible degradation phenomena is recommended molding with a moisture content < 0.08%. The drying time depends on the initial moisture content and the drying conditions used. Typically 4-6h hours at 110°C with dry air (dew point of <-30°C) are sufficient for the material stored in unopened packs or with moisture content < 0.20-0.25%.

Injection molding

The following conditions apply to the normal injection molding process of FRIANYL XT4. Machine temperatures: barrel 310-325°C, nozzle and hot runners 325-340°C. Mold temperatures: 100°C. Back pressure: typically, < 5 bar (hydraulic pressure). Temperatures exceeding 340°C and long residence time could lead to degradation and brittleness of the material. In case of gas generation in the melt, please verify moisture content and processing temperatures. Usage of regrind is possible depending on the molded part characteristics. For further details, please contact our technical support team.

Injection Molding Postprocessing

Parts made by FRIANYL XT4 compound, do not change significantly their performance depending on the moisture uptake. Normally, a conditioning cycle is not necessary. After molding, with favorable environmental conditions, a piece can absorb moisture up to 0,1-0,3% in 24h and reach the equilibrium during its lifetime. The post-treatment of the parts may include annealing at 100-110°C in the oven, up to four hours. This treatment is useful to relax any internal stress.

Characteristics

Special Characteristics	Flame retardant, Heat resistant
Product Categories	Glass reinforced
Processing	Injection molding
Delivery Form	Granules

