



Moulding Materials

All materials are RoHS and REACH Compliant – please refer to website for details and certificates.

Miles Platts have the knowledge and capability to design and process in an extensive variety of engineering thermoplastic and thermoset materials, giving design engineers flexibility to select the most appropriate grade to achieve a cost effective solution. Miles Platts work closely with leading polymer manufacturers such as DuPont, Rhodia, B.A.S.F., DSM, Ticona, EMS and Chevron Phillips, continually testing new and advanced materials ensuring that customers benefit from leading edge moulding technology.

Common materials are as follows:

Nylon 66: 30% Glass Reinforced & Unreinforced

Used in the majority of coil bobbin applications world-wide due to its good electrical and flammability properties and ability to mould thin sections whilst retaining a high degree of stiffness. Unreinforced Nylon 66 and Glass Reinforced Nylon 66 have a recommended temperature rating of Class B (130°C). Some grades have UL 1446 insulation systems up to Class F (155°C)

Flame Retardant Nylon 66: 25% Glass Reinforced & Unreinforced

These materials have similar characteristics to Nylon 66. A Halogen-free Flame Retardant system is incorporated to meet a flammability rating of UL94V0 and to meet the 960°C glow wire requirements (IEC 60695).

Nylon 46 30% Glass Reinforced

Nylon 46 differs from Nylon 66 having higher heat resistance, is tougher, more rigid and has less creep at high temperatures. Available in UL94V0.

Due to its high crystallinity, Stanyl retains a high level of stiffness at temperatures close to its melting point. This property can prove an advantage when soldering at higher temperatures.

Liquid Crystal Polymer – LCP

LCP Benefits from superior high temperature performance and dimensional stability whilst moulding extremely thin sections. LCP has inherent flame retardancy to UL94V0.

Thermoplastic Polyesters – PBT and PET

These materials are increasingly selected for applications where high stiffness, low moisture absorption, dimensional and thermal stability characteristics are required.

Polyphenylene Sulfide – PPS

PPS has a high resistance to deformation, benefiting from extreme stiffness and is very stable at high temperatures. PPS is inherently flame retardant.

Frame VA Ratings

Frame VA capabilities shown on standard bobbin tables for laminated core transformers are based on an approximate 70°C temperature rise for single section bobbins and should only be taken as a design guide. The actual output VA that can be achieved will depend upon the utilisation factor of the available bobbin winding area for the wire sizes, screens and interwinding insulation used in the design.



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Group	Manufacturer	Trade Name & Grade	Miles Platts Generic Material Code	Polymer Specific Material Code*	Recommended Maximum System Temperature	UL1446 Electrical Insulation System File Number	Heat Deflection Temperature (°C)	Material Data Sheet CTI Volt	Glow Wire Flammability (°C)
Nylon 66									
30% Glass Reinforced	DuPont	Zytel 70G30HSL	GNN	Z30	Class F 155°C	E69939	250 @ 1.8 MPa	400	-
30% Glass Reinforced	Rhodia	Technyl A218V30	GNN	TA3	Class B 130°C	E130357	250 @ 1.8 Mpa	425	650
25% Glass Reinforced	Rhodia	Technyl A20V25	FGN	V25	Class B 130°C	-	250 @ 1.8 Mpa	400	960
Unreinforced	DuPont	Zytel 101F	UNN	10F	Class B 130°C	E69939	195 @ 0.4 Mpa	-	960
Nylon 66/6									
Unreinforced	EMS	Grilon TSV0		TS0	Class B 130°C	-	210 @ 0.45 Mpa	600	960
Nylon 46									
30% Glass Reinforced	DSM	Stanyl TE250 F6		FST	Class H 180°C	E125671	290 @ 1.8 Mpa	225	-
PET Polyester									
30% Glass Reinforced	DuPont	Rynite FR530L		FR3	Class N 200°C	E69939	224 @ 1.8 Mpa	250	960
PBT Polyester									
30% Glass Reinforced	DSM	Arnite TV4261		261	Class F 155°C	E125671	205 @ 1.8Mpa	400	-
PPS Polyphenylene Sulphide									
40% Glass Reinforced	Ticona	Fortron 1140 L4		FT4	Class N 200°C	-	270 @ 1.8Mpa	125	-
LCP Liquid Crystal Polymer									
30% Glass Reinforced	Ticona	Zenite 6130L		FZN	Class R 220°C	E60824	265 @ 1.8Mpa	200	-
30% Glass Reinforced	Ticona	Vectra E130i		E13	Class R 220°C	-	276 @ 1.8 Mpa	175	-
40% Glass Reinforced	Sumitomo	Sumikasuper LCP E4008			Class F 155°C+	E200050, E313942, E231977	313 @ 1.8 Mpa	-	-
PF Phenolic									
Glass / Mineral Filled	Sumitomo	Sumikon PM9630		96J	Class F 155°C	E209189	-	175	-

The above list reflect materials used for our standard ranges and popular choices used for customer designed products.

The materials generally used for our standard ranges are shown on the applicable catalogue page.

Please contact our sales department if you cannot find a suitable material above for your application.

Maximum system temperature recommendation based Available UL 1446 insulation systems or experience and customer feedback.

Material data sheets are available to download from our web-site www.milesplatts.co.uk

GNN is Miles Platts material code for a 30% Glass Reinforced Nylon to a flammability rating of UL94HB – We currently use the materials as listed above, but we reserve the right to use an alternative material of the same or better characteristics should quality or commercial reasons arise. Please use the specific material code* to specify a particular material.

UNN is Miles Platts material code for an Unreinforced Nylon (used primarily for Insulation covers and potting boxes) to a flammability rating of UL94V2 – We currently use the materials as listed above, but we reserve the right to use an alternative material of the same or better characteristics should quality or commercial reasons arise. Please use the specific material code* to specify a particular material.

FGN is Miles Platts material code for a Glass Reinforced Nylon to a flammability rating of UL94V0 – We currently use the materials as listed above, but we reserve the right to use an alternative material of the same or better characteristics should quality or commercial reasons. Please use the specific material code* to specify a particular material.

If a specific material is required as in the case of complying with a UL 1446 insulation system, the material must be clearly stated on your purchase order.





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Section 2

Manufacturer, Trade Name & Grade	UL Material (QMFZ2) File Number	Minimum Thickness (mm) UL Flammability Rating	Thickness mm used for following CTI, HWI, HAI & RTI's Indices	CTI Group	HWI Group	HAI Group	RTI Elec °C	RTI Imp °C	RTI Str °C
Nylon 66									
DuPont Zytel 70G30HSL	E41938	HB (0.75)	HB (0.75)	1	4	0	140	125	140
Rhodia Technyl A218V30	E44716	HB (0.8)	HB (0.8)	1	4 (1.5mm)	4 (1.5mm)	125	95	95
Rhodia Technyl A20V25	E44716	V0 (0.75)	V0 (0.75)	1	2	0	105	105	105
DuPont Zytel 101F	E41938	V2 (0.71)	V2 (0.71)	0	4	0	130	75	85
Nylon 66									
EMS Grilon TSV0	E53898	V0 (0.4)	V0 (0.8)	0	4	0	125	105	120
Nylon 46									
DSM Stanyl TE250 F6	E47960	V0 (0.35)	V0 (0.75)	2	0	0	140	110	120
PET Polyester									
DuPont Rynite FR530L	E41938	V0 (0.35)	V0 (0.75)	2	2	1	155	155	155
PBT Polyester									
DSM Arnite TV4261	E47960	HB (0.71)	HB (0.71)	1	3	1	140	130	140
PPS Polyphenylene Sulphide									
Ticona Fortron 1140 L4	E107854	V0 (0.38)	V0 (0.81)	4	3	4	220	200	200
LCP Liquid Crystal Polymer									
Ticona Zenite 6130L	E344082	V0 (0.38)	V0 (0.75)	3	3	4	240	220	240
Ticona Vectra E130i	E83005	V0 (0.2)	V0 (0.75)	4	2	4	240	220	240
Sumikasuper LCP E4008	E54705	V0 (0.3)	V0 (0.75)	3	3	0	220	180	220
PF Phenolic									
Sumitomo Sumikon PM9630	E41429	V0 (0.16)	V0 (0.32)	3	3	0	150	150	150

For further information on UL Performance Level Categories (PLC) of CTI, HWI and HAI please follow this link <http://www.ul.com/global/eng/pages/offerings/industries/chemicals/plastics/testing/746a/>

Responsibility For Selection

The responsibility for the selection of appropriate materials and systems lies with the manufacturer of the electro-technical product. Only experience or adequate acceptable tests provide basis for assigning rational temperature limits for the insulation. Service experience is an important basis for the selection.

The property data used has been taken from material manufacturers data sheets and UL (QMFZ2 and UL1446) test results. Miles Platts Limited has made every effort to ensure this property data has been collated without error or omission, but ultimately it is the responsibility of the customer to independently verify this data before final design approval.