Qualities that Bond

TECHNICAL BULLETIN

PRODUCT INFORMATION

ULTIMEG 2000/530OPT
SOLVENTLESS
CLASS H (180°C)
UNSATURATED ISOPHTHALIC POLYESTER
LOW VISCOSITY
DIP IMPREGNATING

ULTIMEG 2000/530OPT IMPREGNATING VARNISH

GENERAL DESCRIPTION
ULTIMEG 2000/530PT is a solventless unsaturated isophthalic polyester resin that gives high bond impregnation working up to Class H (180°C). The system has the high build tough films of traditional solvented systems, with the advantage of low VOC (volatile organic content) emission, and increased retention inside windings. Generally the system can be cured quickly at relatively low temperatures. The cured product has good thermal and mechanical shock properties together with excellent resistance to moisture and salt spray.

APPLICATION
Impregnation of small stators, armatures and tightly wound coils by atmospheric or vacuum immersion or by trickle impregnation

SPECIFICATION
Table 1 Physical properties

Test	Specification	Temperature
Viscosity	2– 2.5poise	25°c
Density	1.08 - 1.12	21°c
Flash point	31°c	N/A
Shelf life	12 Months	25°c
Gel-time	8 – 12 Minutes	120°c

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PROCESSING

METHOD - Atmospheric, vacuum or trickle impregnation

VISCOSITY - As supplied

THINNERS - Not applicable

WORKSHOP PRACTICE

When using 530OPT as a dip impregnant:

1) Preheated components must be allowed to cool to about 35ºC before impregnation.
2) Impregnated components should not come into contact with phenolic varnish or vapours; as such materials inhibit the cure of the 530OPT.
3) When trickle impregnating, ensure adequate ventilation. See material safety data sheet.
4) If vacuum processes are used the inclusion of a condenser trap and a vacuum limiter is recommended.
5) Resin dip tanks should be topped up with fresh at a rate of 10% per month to ensure good stability.
6) If significant impregnation of preheated components are being processed a top up rate of 20-30% pr month will be required to maintain a stable resin.
7) Contamination with rust or other contaminants and chemicals can cause instability of the resin and should be avoided.

The actual cure times are dependent on the efficiency of heating and the size of component. Times shown below are typical for small components.

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CURE SCHEDULE

Table 2 curing conditions for oven cure cure

Temperature	Cure time
160°c	1 hour
150°c	2 hour
140°c	3 hour
130°c	4 hour

Table 3 Curing conditions for induction

Temperature	Cure time
150°c	30 min
140°c	40 min
130°c	60 min

Table 4 – Mechanical properties

Test	Condition	Value	Unit
Condition in thick layers	Upper side Under side Interior	Smooth Non tacky Hard Uniform	S1 U1 I1.1
Bond strength ASTM D2519	23°c 130°c 150°c 180°c	25 17 10 4	kg kg kg kg

Table 5 – Electrical Properties

Test	Condition	Value	Unit
Volume resistivity After water immersion	Initial 7 day storage	$3.5x10^{16}$ $2.5x10^{16}$	Ωcm Ωcm
Volume resistivity at elevated Temperature	155°c	4×10^{12}	Ωcm
Electric strength after water immersion ASTM D 115	Initial Value 24h Storage	145 108	KV/cm KV/cm
Electric Strength at elevated temperature	155°c	105	KV/cm

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Table 6 – Chemical properties in cured condition

Test	Condition	Result	Unit
Resistance to solvent vapour	Acetone Benzene Methyl alcohol Hexane Carbon bisulphate	Stable Stable Stable Stable Stable	- - - - -
Water Absorption	24h @ 23°c 0.5h @ 100°c	7 6	mg mg

HEALTH & SAFETY
Refer to material safety data sheet available.

PACKAGING
25Kg, 5kg

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