



R&D Services Solutions



COMPLETE R&D SOLUTIONS

Solutions	Development
Varnish and Resin formulation	<ul style="list-style-type: none"> - Raw Material Selection and Sourcing - Specification construction - Formulation/Prototyping proposition - Sampling Phase A, B, C - Feedback Phase - Scale-up and Industrialization support
On-demand Tailor-made Insulation	

TESTS & PROTOTYPING

Tests	Tool and monitored parameters
Aging trials	More than 10 ventilated Ageing Ovens (Mettler) Monitoring of mechanical properties, BDV, weight loss, Shrinkage
Thermal Conductivity	Through plane thermal conductivity of insulating laminates by steady state thermal impedance (TIM tester) Thermal conductivity and effusivity of potting resins by MTPS/Hot Disk (Trident)
Physico-chemistry Characterization	FTIR, DSC, Viscosity, gel time, curing kinetics monitoring and simulation, volumic shrinkage, agglomerating strength
Chemical Durability	Compatibility with ATF oils, impregnation varnishes or engine chemical agents
Insulation Prototyping	Lab and pilote scale lamination and coating (Labo combi 400) Converting 2D table
Physical Characterization	Elongation, compression, peeling test, 3 point bending test, Elmendorf tear resistance

STANDARDS

Standards	Description
IEC 60626 - Laminates	Combined flexible materials for electrical insulation
IEC 60243 - Laminates	Electric strength of insulating materials - Test methods
IEC 60674 - Laminates	Specification for plastic films for electrical purposes
BS EN 1939 - Laminates	Self-adhesive tapes. Determination of peel adhesion properties
IEC 60455 - Resins	Resin based reactive compounds used for electrical insulation
IEC 60216 / ASTM D3145	Electrical insulating materials - Thermal endurance properties
ISO 527 / 2535 / 11357	Plastics - Determination of tensile properties / Gel time / Calorimetry
ASTM D2519	Standard Test Method for Bond Strength of Electrical Insulating Varnishes by the Helical Coil Test
ISO 9773	Plastics - Determination of burning behavior of thin flexible vertical specimens in contact with a small flame ignition source
ASTM D7984	Standard Test Method for Measurement of Thermal Effusivity of Fabrics Using a Modified Transient Plane Source (MTPS)
ASTM D5470	Standard Test Method for Thermal Transmission Properties of Thermally Conductive Electrical Insulation Materials

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