

ELECTRICAL INSULATING VARNISHES & RESINS



- ▶ Leading market position through continuous innovation
- ▶ Global portfolio offering world class products

- ▶ Global footprint allowing fast response to customer needs
- ▶ Efficient, safe and modern plants leading to supply reliability

- ▶ Best team in the industry with global product, application, service & market knowledge

We offer enamels, varnishes, resins systems through our different business lines

Wire Enamels



- Wire enamels for the primary insulation of magnet wire
- Magnet wire is applied in electric motors, generators and transformers

Electricals



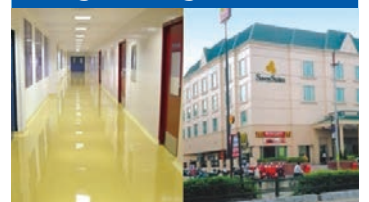
- Consolidation of magnet wire in electrical machine through insulating varnishes & resins.
- Applied through various application techniques (dip, roll-dip, hot-dip, trickle, VPI etc.)

Electronics



- Resin systems for the overall protection of electronic circuits and electric devices
- Resin systems with specific functionalities in electronic components/assemblies

Engineering Materials



- Total solution from Functional flooring to waterproofing and coating
- Polyamide hardeners for varied industrial uses

Product selection guide - Varnishes

Product Designation	Chemical base	Thinner	Viscosity by Flow cup (s)	Curing Cycle (°C/h)	Thermal Class	Distinctive Properties	Suggested Applications
IMPREGNATING VARNISHES							
Elmo 65 E/R	Alkyd phenolic	205	40 – 60	130 / 8	130 (B)	Excellent resistance to centrifugal forces	Impregnation of high speed motor armatures, drives in chemical industry, hand tools etc.
Elmo B 92 FC	Alkyd	234	40 – 60	120 / 2	130 (B)	Flexible cured film, Short curing schedule	Impregnation of fan stators
Elanbond QD	Phenolic based	205 / 234	25 – 35	130 / 2	130 (B)	Fast curing, low solvents, good finish	Impregnation of fan stators
Elmo B 95	Alkyd phenolic	205	40 – 60	130 / 6	130 (B)	Short curing schedule	Impregnation of motor stators, transformers, etc.
Elmoglas V 155	Polyurethane	218	45 – 65	140 / 14	130 (B)	Resistant to refrigerant R11 & R22	Impregnation of hermetic motor stators, Binder varnish for glass fiber tapes & sleeves
Elmotherm F 50	Isophthalic alkyd	205	50 – 70	160 / 6	155 (F)	Excellent dielectric properties under moist condition, good bond and adhesive strength	Impregnation of motor stators, rotors, generators, Aux. Traction motors etc.
ISONEL 31 J	Modified Polyester	31 J	115 – 145 ⁽¹⁾	150 / 4	155 (F)	Mild solvents, excellent resistance to chemicals, UL recognized (E253938)	Impregnation of motor stators, rotors, generators etc.
ISONEL 41 IN	Modified Polyester	205	40 – 60 ⁽¹⁾	150 / 2	155 (F)	Mild solvents, excellent resistance to chemicals	Impregnation of motor stators, rotors, generators, Fans
ISONEL 45 IN	Modified Polyester	205	70 – 100 ⁽¹⁾	140 / 4	155 (F)	High bond strength, excellent dielectric properties under moist condition and adhesive strength	Impregnation of motor stators, rotors, generators, fans
ISONEL F 55 IN	Modified Phenolic based	205	70 – 100 ⁽¹⁾	150 / 3	155 (F)	Mild solvents, excellent resistance to chemicals	Impregnation of motor stators, rotors, generators, fans
Elmotherm F 57	Isophthalic alkyd	205	40 – 60	150 / 4	155 (F)	Excellent resistance to chemicals, good dielectric properties	Impregnation of motor stators, rotors, generators etc.
Elmotherm FR 63	Epoxyester melamine	205	30 – 50	150 / 8	180 (H)	Resistance to refrigerants and hydrolytic stability, UL recognized (E253938)	Impregnation of hermetic motor stator
Elmotherm H 71 A	Polyesterimide	218	65 – 75 ⁽³⁾	150 / 4	180 (H)	Good bond strength at class Temperature, PTB certified, excellent resistance to chemicals and moisture	Impregnation of traction motors, dry type transformers, generators, centrifugal motors, cooling machine drives for ships, mills, motors etc.
ISONEL 51 J	Modified Polyester	51 J	60 – 80 ⁽¹⁾	150 / 4	180 (H)	Mild solvents, tough and elastic cured film, UL approved (E253938)	Impregnation of traction motors, dry type transformers, generators.
PED 1000 - 70 @ 35%	Water based Polyester	225	140 – 160 ⁽¹⁾	130 / 1	155 (F)	VOC free, water borne varnish, UL approved, suitable for dip, roll dip & trickle	Impregnation of small armatures and stator
ISOPOXY 800	Epoxy	Aquasolv	300 – 600 mPa.s ⁽²⁾	160 / 2	180 (H)	Resistant to R134A, good bond strength and hard cured film. Water soluble environmental friendly, UL approved (E253938)	Impregnation of windings of hermetic machines
ANTI TRACKING FINISHING VARNISHES ROOM TEMPERATURE CURED							
Varnish F 93 (Red)	Polyesterimide	217	15 – 16	RT / 24	180 (H)	2K, RT cured red coloured High heat resistance, anti-tracking	Finishing varnish for turbogenerators, traction motors, etc.
B 6 - 665 (Red)	Epoxy	221	90 – 200	RT / 24	155 (F)	Single component class 155 red pigmented anti-tracking finishing varnish	Finishing coat for electrical machines
EpoxyLite 213 PF (Black)	Epoxy	221	280	RT / 24	155 (F)	Black colour, two component Fast curing	Finishing coat for alternators
Beckbond CorroProtecto M (Black)	Alkyd Phenolic	221	55 – 65 ⁽¹⁾	RT / 24	155 (F)	Black colour, one component, fast air drying	Finishing coat field coils, overhang of stators, armatures, transformers, PCBs
EpoxyLite 213 PF (Off White)	Epoxy	221	280	RT / 24	155 (F)	Off white colour, two component fast curing	Finishing coat for alternators
Elmo Luft 1A - FD Elmo Luft 1A - Golden	Phenolic	234	25 – 35	RT / 24	155 (F)	Fast air drying, anti-tracking, available in clear & golden UL approved	Coating on PCB, SRBP components, impregnation of small coils & stators
Elmo Luft 1A - SFD	Phenolic	234	25 – 35	RT / 24	155 (F)	Super fast air drying, antitracking, clear	Coating on PCB, SRBP components, impregnation of small coils & stators
Epoxy Gel coat (Red)	Epoxy	221	45k – 85k ⁽²⁾	RT / 24	130 (B)	3 component, air drying antitracking, red coloured	Overhauling of electrical machines, corrosion resistance coating, etc
Becktol (Red)	Alkyd	234	50 – 160	RT / 24	120 (E)	Air drying, anti-tracking, red pigmented	Finishing coat on overhangs of stators, rotors etc.
Becktol (Grey)	Alkyd	234	50 – 170	RT / 24	120 (E)	Air drying, anti-tracking, grey pigmented	Finishing coat on overhangs of stators, rotors etc.
CORE PLATE VARNISHES							
ISONEL CPV	Alkyd phenolic	CPV	115 – 145	350 – 450 / 1 - 2 min.	155 (F)	Water soluble, good adhesion, punching quality & insulation resistance	Coating laminations of motors, transformers, hydrogenerators etc.
Elmotherm WS 97	Phenolic melamine	Distilled Water	70 – 90	350 – 45 / 1 - 2 min.	155 (F)	Water soluble, good adhesion, punching quality & insulation resistance	Coating laminations of motors, transformers, hydrogenerators etc.
BINDER VARNISHES							
Elmo 799	Isophthalicalkyd	231	60 – 80	120 / 15 min	120 (E)	High flexibility retention after ageing	Binder varnish for polyester film-glass-mica tapes
Elmoglas V 172	Polyurethane	218	20 – 30	155 / 30 min – coat 1 155 / 60 min – coat 2	155 (F)	Hydrolytic stability, quick drying, flexible	Impregnation of glass fibre sleeveings, tapes also binder varnish for glass-fibre covered wires
Elmoglas V 132 - 48 A	Epoxy	218	30 – 40	300 – 400 / <3 min	155 (F)	Good bonding & flexibility	Binder varnish for glass-fibre covered wires
Elmoglas H 69 A	Polyesterimide	218	50 – 65	300 – 400 / <3 min	180 (H)	High flexibility retention after ageing	Binder varnish for polyester film- glass-mica tapes, GFCC
SPECIAL PURPOSE VARNISHES & PRODUCTS							
Insulation Adhesive P 80	Polyvinyl alcohol	Distilled Water	10,000 – 15,000 ⁽²⁾	RT / 4 – 8	105 (A)	Good bonding, resistant to transformer oil	Gluing of cotton tapes, hard boards etc. during construction of transformers
Masking Grease	Masking Compound		Grease		-	Non a hazardous masking compound, compatible with all elantas varnishes & resins	To prevent resins & varnishes adhering to all types of machined surfaces such as shafts, spigots, threaded bars, drilled and tapped holes, motor stator/rotor IDs/ODs, transformer parts etc.

Notes: All viscosities are by DIN 53211/ Cup 4 at 23°C (1) Viscosity at 25°C by IS 3944-1966/Cup No. 4 (2) Viscosity by Brookfield viscometer @ 23°C acc to ISO 2555 (3) Viscosity by ISO2431 6mm Cup 25°C

Product selection guide - Resins

Product Designation	Hardener	Gel Time (°C/min)	Viscosity by Brookfield (mPa.s)	Curing cycle (°C/h)	Thermal Class	Distinctive Properties	Suggested Applications
UNSATURATED POLYESTER / IMIDE MONOSTYRENE DILUTED SOLVENTLESS IMPREGNATING RESINS (DOBECKAN)							
Dobeckan FT 1052	P	100 / 40 – 55	480 – 520	140 / 2	180 (H)	Good tank stability, UL approved (E253938) DIP & VPI	Impregnation of general purpose motors, rewinding of medium voltage machines
Dobeckan FT 1052 EK	-	120 / 15 – 25	120 – 150 ⁽¹⁾	150 / 1	180 (H)	Fast cure, high reactivity resin, DIP & VPI 1K UL approved (E253938)	Impregnation of general purpose motors, rewinding of medium voltage machines
Dobeckan F 2504 / E	P	100 / 30 – 40	800 – 1000	140 / 2	155 (F)	High gloss, white pigmented, good tank stability, DIP & VPI	Impregnation of open type TW & HID ballasts
Dobeckan F 2510 / E	K2	100 / 20 – 30	50 – 80 ⁽¹⁾	150 / 1	155 (F)	High reactive, white pigmented, DIP & VPI	Impregnation of open type TW & HID ballasts
UNSATURATED POLYESTER / IMIDE VINYL TOLUENE DILUTED SOLVENTLESS IMPREGNATING RESINS (DOBECKAN)							
Dobeckan FT 2015 / 90L EK	-	120 / 16 – 24	55 – 65 ⁽³⁾	150 / 1	200 (C)	1K, high tank stability, thixotropic, UL approved (E253938) VPI	Impregnation of wind mill generators, all high thermal capability machines
Dobeckan FT 2005 / 500 EK	-	120 / 20 – 40	480 – 520	160 / 4	200 (C)	1K, balanced properties, UL approved (E253938), VPI	Impregnation of traction machines
50 VT - 28 F	DICUP	126 / 7 – 14	250 – 700	150 / 2	180 (H)	Filled, high heat dissipation, Off-white colour, good mechanical strength, UL approved (E253938)	Impregnation of open type TW & HID ballasts
50 VT	-	125 / 5 – 15	50 – 75 ⁽¹⁾	150 / 2	180 (H)	1K, glossy finish cured film, good mechanical & dielectric properties UL approved (E253938)	Impregnation of static devices such as transformers
50 VT FC	-	124 / 5 – 15	50 – 75 ⁽¹⁾	150 / 1	180 (H)	1K, glossy finish cured film, good mechanical & dielectric properties	Impregnation of static devices such as transformers
EPOXY BASED SOLVENTLESS IMPREGNATING RESINS (DOBECKOT)							
Dobeckot 520 F	WH 7015	120 / 12	720	150 / 1	155 (F)	2K, very low viscosity, excellent flexibility, anhydride cured, VPI	Trickle impregnation of high speed armatures like starter motors, alternators. VPI for electrical machines
EpoxyLite EIP 5070	-	165 / 6 – 10	3000 – 5000	165 / 4	180 (H)	Thixotropic, high viscosity, 1K epoxy UL Approved (E253938)	Impregnation of severe duty motors
EpoxyLite 987	-	165 / 5 – 15	Paste	165 / 6	180 (H)	1K, red thixotropic, UL approved (E253938) wet winding	Impregnation of salient pole motor armatures
EpoxyLite 006 - 0841	-	160 / 3 – 6	650 – 800	165 / 6 – 12	180 (H)	1K, epoxy based, UL approved (E253938), global VPI, suitable upto 13.8 kV	Motors, armatures, traction motors,
EpoxyLite 006 - 0841 R	-	160 / 2 – 3	650 – 800	165 / 6 – 12	180 (H)		
UNSATURATED POLYESTER / IMIDE MONOSTYRENE DILUTED SOLVENTLESS TRICKLE RESINS (DOBECKAN)							
Dobeckan FN 1002	K2	80 / 38 – 42	250 – 300	130 / 0.5	155 (F)	Fast cure, high reactivity resin,	Impregnation of solenoid valves, house hold electrical machines etc.
Dobeckan FT 1040 / 120 E		80 / 35 – 40	35 – 45 ⁽¹⁾		180 (H)	Low viscosity, tough & Elastic, UL Approved (E253938)	Impregnation of alternator stators, Electrical motor armatures etc
Dobeckan FT 1040 / 180 E		80 / 35 – 50	160 – 200			High reactivity, high mechanical strength, UL approved (E253938)	
Dobeckan FT 1080 / 45 E		100 / 5 – 10	40 – 50 ⁽¹⁾		Impregnation of auto electric component		
Dobeckan FT 1080 / 85 E		100 / 5 – 10	75 – 100			High viscosity, filled, high stability	Gel coating of small armatures
Dobeckan FT 1080 / 500 E		80 / 35 – 40	480 – 520				
Dobeckan FT 2001 / 500 E		80 / 20 – 30	120 – 135 ⁽¹⁾				
Dobeckan 075 – 2715		100 / 3 – 10	5000 – 10000				
EPOXY BASED SOLVENTLESS TRICKLE RESINS (DOBECKOT)							
Dobeckot 605	762	80 / 5	180	130 / 0.5	130 (B)	High pot life, heat cured	Impregnation of hand tools, household machines, universal motors, etc
	758	80 / 2	200			Fast cure, high chemical resistance	
UNSATURATED POLYESTER / IMIDE MONOMER FREE SOLVENTLESS RESINS (ELAN-PROTECT)							
ELAN-PROTECT® UP 142	-	120 / 3 – 7	600 – 1400	150 / 2	180 (H)	Fast cure, high chemical resistance, solvent free, VOC free, 1K, low emmision, non hazardous, suitable for dip, hot roll dip, VPI & trickle impregnation system	E-Mobility, transformers, motors, generators, rotating electrical equipments, electrical coils, power tools
				160 / 30			

Notes : 1. All Dobeckan resins has resin : hardener mixing ratio of 100 : 1 except Dobeckan 075-2715 where the mixing ratio is 100 : 3 parts by weight. For Dobeckot resins refer respective TDS. | 2. Shelf life at < 25°C for all Dobeckan resins is 6 months except Dobeckan FT 2015/.. EK & Dobeckan FT 1052 EK has 4 months.

(1) Viscosity at 25°C by IS 3944-1966/Cup No. 4

(2) Viscosity at 23°C by DIN 53211/ Cup 4

(3) Viscosity at 25°C by ISO 2431/ Cup 6

New Products



PED 1000-70@35% | Water based varnish

- Water based PE varnish
- Fast and low temperature curing
- Low VOC
- Excellent electrical and mechanical properties
- 130 - 220°C class EIS (file number E87039)
- No toxic fumes, spills can be cleaned easily with water
- Non dangerous goods as per IMDG code
- Dip & bake / trickle / roll dip

Applications: Small motors, FHP motors, transformers and fans etc.

Elanbond QD | New generation varnish for fan industries

- Phenolic based, solvented, fast baking impregnating varnish
- Ready to use, thermal class 130
- Fast curing time (FC)
- Cured film displays very good film formation and flexibility
- Suitable with dip + bake and conveyorized dip + bake method
- Low smell, mild solvents

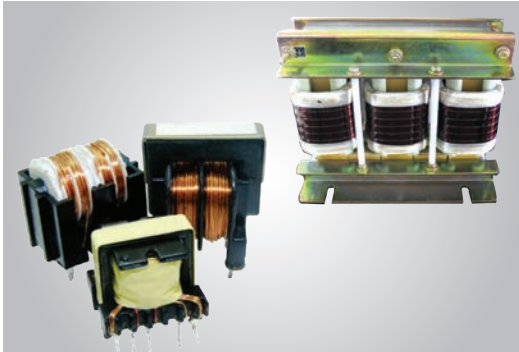
Applications: Ceiling fans, TPW fans and small size motors



Elmoluft 1A – SFD | Super fast air-drying varnish

- Super fast air-drying varnish
- Touch dry within 15 minutes
- 50% reduction in curing cycle
- Class 155 varnish
- Reduced energy bills
- Impregnating as well as finishing varnish
- Can be used with dip/brush/spray method

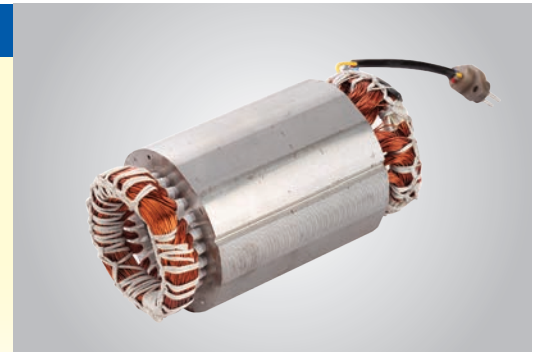
Applications: Motors | LV Transformers | E-Mobility



ISONEL 45 IN | Impregnating varnish

- Single component, ready to use, class 155 varnish
- Good dielectrical properties
- Excellent bond strength (≈ 250 N)
- Fast curing time
- Mild solvents / low odor
- Good resistance to heat & chemicals
- Dip + bake, VPI + bake

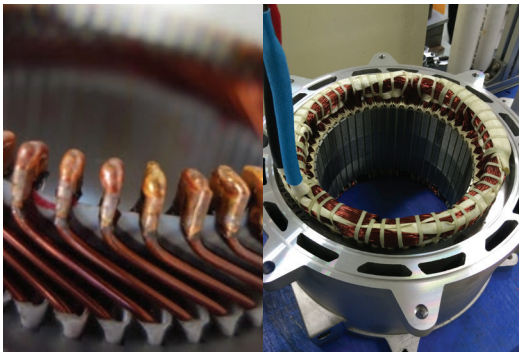
Applications : Transformers | Small motors | Fan Stators



ELAN-Protect® UP 142 | Single component impregnation solution for EV motors

- 1K, unsaturated polyesterimide, VOC free resin
- Thermal class (180), solventless resin
- High stability, high pot life same as shelf life
- No environmental hazardous, very low emissions
- High mechanical & electrical properties at high temperature
- UL approved; REACH & RoHS compliant
- Dip, hot roll dip, trickle, vacuum impregnation (VI), vacuum pressure impregnation (VPI)

Applications : E-Mobility | Motors, transformers, generators | Electrical coils, power tools



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