

Product Selection Guide Business Line Secondary Insulation

Insulating Varnishes - Overview

Primary Insulation

- Terebec®
- Amide imide
- Allotherm
- Nylon
- Isonel®
- Isomid®
- Isomelt®
- Deamelt®
- Formvar®
- Bondall™
- Elmoglas

- Wire enamel with thermal class 105 to 220
- UL approved products
- Environment friendly cresol free products
- Binder varnishes for glass fibre covered conductors
- PVF for CTC & shaped conductors

Secondary Insulation

- ELAN-Safe
- Elmo®
- Elmoglas
- Elmo Luft®
- Elmotherm®
- Isonel®
- Isopoxy®
- Epoxylite
- Becktoll
- Dobeckan®
- Dobeckot®

- Alkyd, phenolic, polyster, polyurethane and epoxy based
- Solventless and water soluble
- Thermal class 105 to 200. UL approved products
- Dip, VPI, trickle and wet winding resins
- Core plate, impregnating, finishing and binder varnishes

Electronic and Engineering Materials

- Elan-tron®
- Dobeckot®
- Dobeofil
- Dobeckan® IF
- SHIMOKOTE
- SHIMOREZ
- SHIPAL
- SHIMOCAST

- Products based on epoxy and polyurethane
- Thermal class 120 to 180
- Halogen-free resins
- Flame retardant resins
- UL approved products
- Available in un-filled and filled versions with variable viscosities and various colours

Disclaimer

This information is intended only for general guidance in the application of our product. It has been obtained by careful investigation and represents the present state of our knowledge and experience. Because of the large number of possible methods of application and processing, we are not able to assume responsibility in any one particular case for either the technical results or the patent rights situation applicable to the country under consideration.



PSG-IV January 2014

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PRODUCT SELECTION GUIDE : INSULATING VARNISHES

Product	Chemical base	Thinner	Viscosity at 23 °C by DIN 53211 / Cup 4(s)	Curing cycle (..°C/h)	Suitable for 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. Impregnation of high speed motor armatures, drives in chemical industry, hand tools etc. Impregnation of fan stators
Elmo 65 E/R FC	Alkyd phenolic	205	40 - 60	130 / 4	130 (B)	Fast curing version	
Elmo B 92 Elmo B 92 FC	Alkyd Alkyd	234 234	40 – 60 40 - 60	120 / 4 120 / 2	130 (B) 130 (B)	Flexible cured film, Short curing schedule Fast curing version	
Elmo B 95 Elmoglas V 155	Alkyd phenolic Polyurethane	205 218	40 – 60 45 – 65	130 / 6 140 / 14	130 (B) 130 (B)	Short curing schedule Resistant to refrigerant R11 & R22	Impregnation of motor stators, transformers, etc. Impregnation of hermetic motor stators, Binder varnish for glass fiber tapes & sleeves
Elmotherm F 50	Isophthalic alkyd	205	50 – 70	120 / 12	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⁾	100 / 2 + 140°C /6	155 (F)	Mild solvents, excellent resistance to chemicals, UL recognised (E253938)	Impregnation of motor stators, rotors, generators etc.
ISONEL 31 J FC ELAN-Safe™ 210U10-75	Modified Polyester Alkyd	31 J D.I.Water	115-145 ⁽¹⁾ 7000-20000 mPa.s ⁽²⁾	150 / 2 150/3	155 (F) 155 (F)	Fast curing version of ISOLEL 31J Single component waterborne varnish	Impregnation of motor stators, rotors, generators, etc. Electrical machines especially Impregnation of stators (upto 280 frame sizes), coils and transformers
Elmotherm F 57 Elmotherm FR 63	Isophthalic alkyd Epoxyester melamine	205 205	40 – 60 30 – 50	120 / 10 150 / 8	155 (F) 180 (H)	Excellent resistance to chemicals, good dielectric properties Resistance to refrigerants and hydrolytic stability, UL recognized (E253938)	Impregnation of motor stators, rotors, generators etc. Impregnation of hermetic motor stator
Elmotherm H 71 A	Polyesterimide	218	65 – 75 ⁽³⁾	120 / 4 + 150 / 8	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	51J	60 – 80 ⁽¹⁾	120 / 2 + 160 / 6	180 (H)	Mild solvents, tough and elastic cured film, UL approved (E253938)	Impregnation of traction motors, dry type transformers, generators
ISOPOXY 800	Epoxy	Aquasolv	300-600 mPa.s ⁽²⁾	160 / 2	180 (H)	Resistant to R134A, good bond strength & hard cured film. Water soluble environmental friendly, UL approved (E253938)	Impregnation of windings of hermetic machines
ANTI-TRACKING FINISHING VARNISHES							
Elmo Luft 1A-..	Phenolic	234	25 – 35	RT / 12	130 (B)	Fast air drying, anti-tracking. Available in clear & golden.	Coating on PCB, SRBP components, impregnation of small coils & stator
B6-665	Epoxy	221	90 - 200	RT / 24	155 (F)	Single component, class 155, red pigmented, anti-tracking finishing varnish	Anti-tracking finish coat for electrical machines
EpoxyLite 213 PF Becktol (Red)	Epoxy Alkyd	221 234	280 50 – 160	RT / 24 RT / 24	155 (F) 120 (E)	Black colour, two component Fast curing Air drying, anti-tracking, red pigmented	Finishing coat for alternators Finishing coat on overhangs of stators, rotors etc.
Becktol (Grey) Epoxy Gel Coat (Red)	Alkyd Epoxy	234 221	50 – 170 45k - 85k ⁽²⁾	RT / 24 RT / 24	120 (E) 130 (B)	Air drying, anti-tracking, grey pigmented 3-component, air drying, anti-tracking, red coloured	Finishing coat on overhangs of stators, rotors etc. Overhauling of electrical machines, corrosion resistance coating, etc
Varnish F93 (Red)	Polyesterimide	217	15 – 16	RT / 24	180 (H)	2K, RT cured High heat resistance, anti-tracking	Finishing varnish for turbogenerators, traction motors etc.
CORE PLATE VARNISHES							
CPV 4000	Alkyd phenolic	205	45 – 65	350 – 450°C / 1-2 min.	130 (B)	Good adhesion, punching quality & insulation resistance	Coating laminations of motors, transformers, hydrogenerators etc.
ISONEL CPV	Alkyd phenolic	CPV	115-145	350 – 450°C / 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 – 450°C / 1-2 min.	155 (F)	Water soluble, good adhesion, punching quality & insulation resistance	Coating laminations of motors, transformers, hydrogenerators etc.
BINDER VARNISHES							
Elmo 799 Elmoglas V 172	Isophthalic alkyd Polyurethane	231 218	60 – 80 20 - 30	120°C / 15 min 155°C / 30 min - coat 1 155 / 60 min - coat 2	120 (E) 155 (F)	High flexibility retention after ageing Hydrolytic stability, quick drying, flexible	Binder varnish for polyester film-glass-mica tapes Impregnation of glass fibre sleeveings, tapes also binder varnish for glass-fibre covered wires
Elmoglas V 132-48 A Elmoglas H 69 A	Epoxy Polyesterimide	218 218	30 – 40 50 – 65	300 – 400°C / <3 min 300 – 400°C / <3 min	155(F) 180 (H)	Good bonding & flexibility High flexibility retention after ageing	Binder varnish (BV) for glass-fibre covered wires Binder varnish for polyester film-glass-mica tapes, GFCC
SPECIAL PURPOSE VARNISHES & PRODUCTS							
Insulation Adhesive P80	Polyvinyl alcohol	Distilled Water	10,000 – 15,000 ⁽²⁾	RT / 4 - 8	105 (A)	Good bonding, resistant to transformer oil construction of transformers	Gluing of cotton tapes, hard boards etc. during

Note : (1) Viscosity @ 25°C by IS3944-1966/Cup No. 4 (2) Viscosity in mPa.s by Brookfield viscometer @ 23°C acc to ISO 2555 (3) viscosity @ 23 °C by ISO 2431/cup #6