

WIRE ENAMELS

Wire Enamels | Binder Varnishes Primers | Lubricants

- Leading market position through continuous innovation
- Global Portfolio offering world class technology
- Global footprint allowing fast response to customer needs
- Underwriter Laboratories' testing equipment and product listings
- 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 for the primary insulation of magnet wire
- Magnet wire is applied in electric motors, generators and transformers



- Secondary insulation of winding wire after it is mounted in a device (electric motor, generator or transformer)
- Applied through various application techniques (dip, roll-dip, hot-dip, trickle, VPI etc.)



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





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

Wire Enamels

Product	Chemical base	Viscosity by at 23 C	Solid content (% by wt.)	Recommended for wire size (mm dia.)	Class of wire	Distinctive properties of wire enamel / enamelied wire	Relevant specification for wires
Polyester Wire Enamels							
Terebec F 35 A	Polyester	90-110 s	34-36	0.05-1.0	130L	Wide curing range	IS 13730-34 / IEC 60317-34
Terebec F 35- Al	Polvester	90-110 s	34-36	0.25 -1.6	1301	Specially designed for Aluminium conductors, Low curing Temp.	IS 13730-34 / IEC 60317-34
Terebec E 215-35	Polyecter	00_110 c	34-36	0.05-1.0	1301	Light of through	IS 13730-34 / IEC 60317-34
Tarahaa 210 25	Palvastar	90.100 -	24.26	0.05-1.0	1201	High cardinologin	
Telebec 210-35	Polyester	80-100 \$	34-30	0.05-1.0	130L	High processing speed, High cut through	IS I3730-34 / IEC 60317-34
Terebec 216-35 D	Polyester	80-100 s	34-36	0.05-1.0	130L	Best runability on high speed machine.	IS 13730-34 / IEC 60317-34
T 240.25.46		00.400	24.26	0.05.4.0	4201		
lerebec 218-35 HS	Polyester	80-100 s	34 -36	0.05-1.0	130L	For High speed enamelling machines having V x d $>$ 100.	IS 13/30-34 / IEC 6031/-34
Terebec G 250-35	Polyester	90-110 s	34-36	0.05-1.6	130L	Reddish brown coloured wire, high processing speed	IS 13730-34 / IEC 60317-34
Terebec 230-35 G	Polyester	90-110 s	34-36	0.05-1.6	130L	Reddish Golden coloured wire, high processing speed	IS 13730-34 / IEC 60317-34
Terehec 231-35 P	Polvester	80-100 s	34-36	0.05-1.6	130	Excellent Dark to light brown colour, wide curing range	IS 13730-34 / IEC 60317-34
Torobox 222 25 VC	Delvector	00 110 c	24.36	0.00 1.0	1201	Vallawich Caldar calaurad wire high processing spage	
	Polyester	90-110 5	54-50	0.5-1.0	ISUL	Tenowish dolden coloured wite, high processing speed	13 13/30-34 / IEC 00317-34
Terebec 232-35 YG(H)	Polyester	60-80 s	34-36	0.05 -1.0	130L	Yellowish Golden coloured wire, high processing speed, suitable for horizontal machines	IS 13/30-34 / IEC 60317-34
Modified Polyester Wire Enamels							
Terebec 101-36	Modified Polyester	100-120 s	34-36	0.05-2.0	130L	Improved heat shock	IS 13730-34 / IEC 60317-34
Terehec 227-35	Modified Polyester	110-135 s	34-36	0.2-5.0	1301	Excellent flevihility & adherence	IS 13730-34 / IEC 60317-34
Toroboc 227 35	Modified Polyester	80,100 c	24.36	0.05.3.5	1201	Lick processing and Lickey to date Evcellent flexibility	
	woulled Polyester	80-100 \$	34-30	0.05-2.5	130L		15 13730-34 / IEC 60317-34
lerebec 256-40	Modified Polyester	600-800 mPa.s	39-41	0.05-2.0	155	Lower viscosity, Excellent heat shock	IS 13730-3 / IEC 60317-3
Terebec 257-38	Modified Polyester	750-850 mPa.s	37-39	0.05-2.0	155	For High speed enamelling m/c having V x d $>$ 100.	IS 13730-3 / IEC 60317-3
Terebec 257-35	Modified Polyester	80-100 s	34-36	0.05-1.0	155	For High speed enamelling m/c having V x d $>$ 100 felt wiping.	IS 13730-3 / IEC 60317-3
Terebec 251-38 F	Modified Polyester	750-850 mPa s	37-39	0.05-2.0	155	Class 155 economical version for High speed to low speed machines	IS 13730-3 / IEC 60317-3
Toroboc 251 36 F	Modified Polyester	90,100 c	24.26	0.05 2.0	155	Class 155 economical version, for High speed to low speed machines.	IS 13730 3 / IEC 60317 3
	woulleu Polyestei	00-100 5	54-50	0.05-1.0	100	Class 155 economical version, for high speed to low speed machines, left wiping.	13 13730-3 / IEC 00517-5
Polyurethane Wire Enamels (Solderable)							
WE 1380/29 M1	Polyurethane	95-145 mPa.s	28-30	0.15-0.5	180	High processing speeds, good Solderability, high tan δ UL approved	IS 13730-51 / IEC 60317-51
WE 1355-30	Polvurethane	25 -40 sec ④	29-31	0.02-0.5	155	Higher cut through, good solderability	IS 13730-20 / IEC 60317-20
WE 1355-35	Polyurethane	50-70 sec ④	34-36	0.02-0.5	155	Higher cut through good solderability	IS 13730-20 / IEC 60317-20
Polyostorimido Wiro Enomolo	roryurethane	50-70 300 @	54-50	0.02-0.5	155	night tut though, good soldclability	13 13730-207 120 00317-20
Turkey TD 542-20			27.20	0.05.4.0	4.00		
Terebec TR 543-38	THEIC Polyester imide	750-850 mPa.s	37-39	0.05-1.6	180	High tan & bending point & cut through property, UL approved as a base coat.	IS 13730-8 / IEC 60317-8
Terebec TR 5/13-35	THEIC Polyester imide	50-70 s	34-36	0.05-1	180	High tan δ bending point & cut through property, UL approved as a base coat.	IS 13730-8 / IEC 60317-8
		56-76 3	54-50	0.03-1	100	For medium wire sizes.	13 13730-07 IEC 00317-0
Terebec TR 5/3-32	THEIC Polyester imide	40-60 s	31_33	0.05-0.5	180	High tan δ bending point & cut through property, UL approved as a base coat. For felt application	IS 13730-8 / IEC 60317-8
	THEIC Folyester IIIIde	40-00 3	21-22	0.05-0.5	100	and Fine wire	13 13730-87 IEC 00317-8
Terebec TR 543-39	THEIC Polyester imide	750-850 mPa.s	37-39	0.05-1.6	180	High tan δ bending point >190 ON 200 VxD m/c, UL approved as a base coat.	IS 13730-8 / IEC 60317-8
Terebec MT 533-34	THEIC Polyester imide	50-65 s	33-35	0.05-1.0	180	For High speed enamelling machines having V x $d > 100$ UL approved	IS 13730-8 / IEC 60317-8
Toroboc MT 522 20	THEIC Delvester imide	7E0.9E0 mDa c	29.40	0.05.2.0	100	For high speed enameling machines having $V x d > 100$, UL approved.	IS 13730 8 / IEC 60317 8
		730-030 IIIFa.5	56-40	0.05-3.0	100	roi nigii speed enamening machines naving v x u > 100, ot approved.	13 13730-8 / IEC 00317-8
Terebec 540-36	THEIC Polyester imide	80-90 s	35-37	0.05 – 1.6 Rect. conductors	180	Excellent adhesion, Balanced Mechanical & thermal Properties.	IS 13/30-8 / IEC 60317-8
	,						13 13730-28 / IEC 00317-28
Terebec 540-38	THEIC Polvester imide	750-850 mPa.s	37-39	0.05 – 1.6 Rect. conductors	180	Lice Decession, Balanced Mechanical & thermal Properties.	IS 13/30-8 / IEC 60317-8
	, ,					High Processing speed	13 13/30-28 / IEC 60317-28
Polyamide-Imide Wire Enamels							
AI 1013 BV/35	Polvamide-imide	700-1500 mPa s	34-36	0.2-1.6	200	Excellent hermetic resistance, low coefficient of friction, Ideal topcoat over PE (I) base coat.	IS 13730-26 / IEC 60317-26
AI 1015 BV/55	l'olyannae-innae	700-1500 111 4.5	54-50	0.2-1.0	200	35% solids version is UL approved as a total coat.	13 13730-207 120 00317-20
AI 1013 BV/25	Polyamide-imide	25-35 s	24-26	0.05-0.5	200	Excellent hermetic resistance, low coefficient of friction, Ideal topcoat over PE (I) base coat. For Felt	IS 13730-26 / IEC 60317-26
	l'olyannae-innae	23-33 3	24-20	0.05-0.5	200	application and fine wire.	15 15750-207 120 00517-20
AL 1013-275C	Polyamide_imide	1800-2800 mPa s	26-28	0.2 to 3.0	220	Suitable for Total coat application, Excellent adhesion. Balanced thermal and mechanical	IS 13730-57 / IEC 60317-57
AI 1013-273C	Folyallilue-illilue	1800-2800 IIIFa.s	20-28	0.2 10 5.0	220	properties.	13 13730-37 / IEC 00317-37
AL 1013-335C	Polyamide_imide	5000-8000 mPa s	32-34	Rectangular conductors	220	Suitable for Total coat application, Excellent adhesion on Rectangular. Balanced thermal	IS 13730-58 / IEC 60317-58
AI 1013-335C	l olyannue-innue	5000-8000 III 8.3	52-54		220	and mechanical properties.	13 13730-387 IEC 00317-38
Allothorm 6021 25	Polyamido imido	650 800 mPa c	25.27	0216	200	Excellent hermetic resistance, low coefficient of friction, topcoat over PE (I) base coat.	IS 12720 26 / IEC 60217 26
Allotherni 602L-55	Polyallilue-illilue	050-000 IIIFd.5	55-57	0.2-1.0	200	UL approved as a top coat.	13 13730-20 / IEC 00317-20
Sivamid 505/24 M	Polyamido imido	800 1000 mPa c	21.22	0.2.2.0	200	Excellent hermetic resistance, low coefficient of friction, Topcoat over PEI base coat.	IS 12720 26 / IEC 60217 26
31valillu 393/34 ivi	Folyallilue-illilue	800-1000 IIIFa.s	21-22	0.2-3.0	200	UL approved Recommended for total coat of fine to medium wire sizes, Styrene resistant.	13 13730-207 IEC 00317-20
Wire Framel 1922/22 MD	Deluamida imida	700.000 mPa c	24.22	0.2.2.0	200	Excellent hermetic resistance, low coefficient of friction. Topcoat over PEI base coat.	
WITE ENdINEL 1823/33 IVIB	Polyallilue-illilue	700-900 IIIPa.s	54-55	0.2-3.0	200	UL approved	15 13/30-20 / IEC 00317-20
010 Nules IC	Deluamida	F0 00@	7.0	0.05 1.0		Recommended as an overcoat on PE. PEI and PU based wires.	
910 NYIOH LS	Polyallilue	20-80 Sec	7-9	0.05 - 1.0		Suitable for fine and superfine wires	
Wire Enamels For Dual Coated Wires (Base Coat +	- Top Coat)						
Terebec TR 543-38 + AI 1013 BV/35	THEIC Polyester imide + Polyamide-imide	750-850 mPa s 700-1500 mPa s	37-39 34-36	0 315-1 6 & Rectangular wires	200	Excellent hermetic & humout resistance, high speed windability, UL approved	IS 13730-13 / IEC 60317-13
	merer ofyester innice i rotyannae innice	750 050 mild.5 700 1500 mild.5	57 55 54 50	0.515 1.0 d Rectangular Wiles	200	Excellent hormotic sociatores high set through suitable for high encod windability	13 13730 137120 00317 13
ISOMID 860/35 LYC + Sivamid 595/34 M	THEIC Polyester Imide + Polyamide-imide	400-600 mPa.s ² 800-1000 mPa.s	37-39 32-34	0.2-1.6	200	Styrene resistant	IS 13730-13 / IEC 60317-13
Torobac \$1225 40 A + AI 1012 DV//25	TUFIC Delverter L Delvemide imide	470 F70 mPa c 700 1F00 mPa c	28.40 24.20	0.215.2.0	200	System to solution the matter sector sector and the sector	IS 12720 12/ IEC 60217 12
	THEIC Polyester + Polyannue-innue	470-570 IIIFd.5 700-1500 IIIFd.5	36-40 34-30	0.515-5.0	200	Excellent nemetic resistance, improved mechanical properties	13 13730-13/ IEC 00317-13
Ierebec TR 543-38 + Allotherm 602L-35	THEIC Polyester imide + Polyamide-imide	/50-850 mPa.s 650-800 mPa.s	37-39 35-37	0.315-1.6 & Rectangular wires	200	Excellent hermetic & burnout resistance, high speed windability, UL approved	IS 13/30-13 / IEC 60317-13
WIRE ENAMELS FOR RECTANGULAR WIRES							
Product	Chemical base	Viscosity by at 23°C ¹	Solid contents (% by wt.)	Recommended for wire size (mm dia.)	Class of wire	Distinctive properties of wire enamel / enamelled wire	Relevant specification for wires
							IS 13730-3 / IEC 60317-3
Terebec FN	Polyesterimide	85-100 s	32-34	2.0-5.0 dia. & up to 60 sqmm rect.	155	Good adherence for rectangular wires	IS 13730-16 / IEC 60317-16
							IS 13730-8 / IEC 60317-8
Terebec MT 533-36 PA	THEIC Polyesterimide	80-90 s	35-37	1.6-5.0 dia. & up to 60 sq. mm rect.	180	Excellent adhesion, heat shock & thermal resistance	IS 13730-28 / IEC 60317-28
							IS 13730-8 / IEC 60317-8
Terebec MT 533-40 PA	THEIC Polyesterimide	800-1000 mPa.s	39-41	1.6-5.0 dia. & up to 60 sq. mm rect.	180	Excellent adhesion, heat shock & thermal resistance	IS 13730-28 / IEC 60317-28
Formvar 2440-3500	Polyvinyl formal	3000-5300 mPa s	20-22	0.5-4.0 dia & un to 60 sq. mm rect	120	Excellent mechanical properties & transformer oil resistant. Ideal for CTC	IEC 60317-12 & IEC 60317-18
		1000-20003	20-22		120	Exclusion inclusion properties & transformer on resistant, fued for CCC	
FOUNDAL C 8359-23	Polyvinyi tormai	1800-3000° mPa.s	22-24@	0.5-4.0 dia. & up to 60 sq. mm rect.	120	Excellent mechanical properties & transformer oil resistant, ideal for shaped conductors	IEC 60317-12 & IEC 60317-18
Primer N 35A	Polyamide	900-1300 mPa.s	22-24	Thicker round & all rect. Cond.	180	Excellent adhesion to bare conductor	-
Primer N 35B	Polyamide	400-600 mPa.s	19-21	Med. round and all rect. conductors	180	Excellent adhesion to bare conductor	-
BINDER VARNISHES FOR GLASS FIBRE COVERED & BRAIDED WIRES							
Product	Chemical base	Viscosity by at 23°C 1	Solid contents (% by wt)	Recommended for wire size (mm dia)	Class of wire	Distinctive properties of wire enamel / enamelled wire	Relevant specification for wires
	Polyostorimido		20 41	necommended for whe size (min did.)	100	Cood bonding & flovibility Hermatic resistant	IS 12720 21 / IEC CO247 24
	File	20-02	59-41		160		13 13/30-31 / IEC 0031/-31
Eimoglas V 132-48 A	Ероху	30-40	50 - 52		155	High bond strength, good flexibility	IS 13730-32 / IEC 60317-32
Elmoglas V 155	Polyurethane	45-65	44 - 46		155	High bond strength ratio, generally used along with Elmoglas V 172 in the ratio 60:40 pbw	IS 13730-32/ IEC 60317-32
Elmoglas V 172	Polyurethane	20-30	45 - 48		155	Excellent flexibility, generally used along with Elmoglas V 155 in the ratio 60:40 pbw	IS 13730-32/ IEC 60317-32
Thinners For Wire Enamels							
Thinner 115	Cresulic solvents based					Suitable for all Polyester Polyesterimide Polyurethane PV/A/PV/E and Nylon wire enamels	
Thinner 130	NMD based					Suitable for Delyemide imide beend wire exemple 0. Driver	
	NIVIP Dased					Suitable for Polyannice-Innice based wire enamels & Primer	
Thinner 506 Bondall						Suitable for Deamelt 355 Wire enamels	

Notes: 10 Viscosity is measured at 23°C by DIN 53211/ Cup 4 or Brookfield viscometer, as indicated by (s) or (mPa.s) | 20 Solids content: 2g /200°C/2 h

@ Viscosity by Brookfield viscometer (ISO 2555) at 25°C $\mid @$ Viscosity is measured at 30°C by Ford B4 Cup

New Products



PEI Enamels with High-Speed runnability

- Specially designed wire enamel having wide curing range
- Suitable for high speed Vertical & Horizontal machines.
- Good Tan Delta (175-190°C)
- Excellent flexibility and adherence (20% elongation x 1d)
- Excellent Hermetic Resistance.
- Suitable for Class 180 and 200 applications.

TEREBEC 251-35F | TEREBEC 251-38F



Excellent enamel for Class 155 application

- Compliant with IEC 60317-3 and IS 13730-3, Class-155 requirements
- Available in 35% and 38% Solids version making it suitable for high speed Vertical & Horizontal machines and Die as well as Felt application
- Excellent flexibility and adherence (20% x 1d) Good Tan Delta bending point value (135-150°C)
- Appealing yellowish golden colour with wide market acceptance
- Cost effective option for Class 155 requirements

PRIMER N-35



Solution to all your adhesion issues for copper and **Aluminium conductors**

- Most popular enamel and extensively used in European countries. Substantial improvement in flexibility, peel and adhesion can be achieved.
- Low consumption. Generally single pass is sufficient to achieve desired results.
- Significantly reduces problems of enamel film peel off and adhesion failure etc.
- Suitable for thicker sized wires (above 1.6mm dia) and all rectangular conductors.

TEREBEC TR 543-32 + AI 1013 BV/25



UL approved Class 200 system for superfine wires

- Class 200 system for fine and super fine wires
- · Ready to use enamels. No dilution or thinning down required
- Suitable for felt application on medium and high speed machines
- Excellent Hermetic and burnout resistance
- Best balanced mechanical and Thermal properties in the Class.
- Low coefficient of friction, suitable for high speed winding
- · Enamelled wires compliant with IS13730-13 and IEC 60317-13.
- UL approved.

AI 1013 - 27 SC | AI 1013 - 33 SC

Class 220 enamel for single coat application

- Suitable for Single coat (Total coat) application on round and rectangular conductors.
- Conforms to Class 220 application.
- Excellent mechanical properties
- Good chemical resistance
- Low coefficient of friction
- Conforms to requirements of IEC 60317-57 and IEC 60317-58.

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ELANTAS

Electrical Insulation

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