ELANTAS
Electrical Insulation

Technical Data Sheet

Terebec MT 533-P

Rev. 1

Polyester-Imide Magnet Wire Enamel

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Description

Terebec MT 533-P is a Polyester-imide Theic modified magnet wire enamel, with excellent technical properties, adhesion has been improved for application on heavy-round wires or on poor quality copper wire.

Uses

Suitable for monolithic or dual coat applications, it meets the requirements of IEC 317-8, -13, -15, -22, -24, -25, -28, -29, -37, -38.

Features and Benefits

- Easy application.
- UL recognized file E 135382, Thermal Class 200, If used in combination with our PAI enamels, Thermal Class 220.
- Transformers mineral oil resistant.
- Excellent stability.
- Compatible with all common impregnating materials.

Application Methods

Terebec MT 533-P is recommended for wide rang of wires (0,20 ÷ 5,00 mm) using horizontal and vertical enameling machines.

Note

The recommendations, test results and suggestions are offered herein as a guide in the use of these materials and are not a guarantee to their performance in as much as ELANTAS Italia, Srl has no control over the use to which others may put the product. The mentioned properties are typical values and are not intended for specification use.

Properties of Material Supplied

Enamel	*Solid content (1g/1h/180℃)*	*Viscosity*	*Range Ø mm*	*Application system*	*Flash point*
MT 533/39 P	38.0-40.0%	700-900 mPa.s at 23℃	0,20 ÷ 5,00	Dies	41℃
MT 533/41 P	39.0-41.0%	1000-1300 mPa.s at 23℃	0,20 ÷ 5,00	Dies	41℃

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Wire Properties

WIRE CONSTRUCTION		
Basecoat	**MT 533/39 P**	
Overcoat		None
American Wire Gauge		AWG 18
Wire Diameter		1.0 mm
Thickness		75 µ
Grade		2

APPLICATION		
Oven Type	VET 375	
Oven Temperature		525ºC
Speed (meters/minute)		55
Number of Passes		10

MECHANICAL PROPERTIES	NEMA MW 1000	ASTM D 1676	IEC 851-3	JIS C 3003		IEC 851-3
						1,0 mm
Mandrel Winding			8-5.1			Pass
Flexibility: 20% Elongation	3.3.1.1	141-148	8-5.1	9.1		Pass
Jerk test			8-5.3			Pass
Peel test			8-5.4			>140 torsions
Elongation to Break	3.4.1.1	122-129	6-3.1			38%
Abrasion resistance			11-6.1			-

THERMAL PROPERTIES	NEMA MW 1000	ASTM D 1676	IEC 851-6	JIS C 3003		IEC 851-6
						1,0 mm
Cut-Through Temperature	3.50.1.1	61-68	10-4.1			3900ºC
Heat Shock - 30 min @ 220ºC	3.5.1.1	156-162	9-3.1	14.1		Pass
Thermal index			15-5.1			212°C

ELECTRICAL PROPERTIES	NEMA MW 1000	ASTM D 1676	IEC 851-5	JIS C 3003		IEC 851-5
						1,0 mm
Breakdown voltage	3.8.1.1	69-75	13-4.1	11.1		12,0 kV
Tangent Delta			19-6.1			205ºC

CHEMICAL RESISTANCE	NEMA MW 1000	ASTM D 1676	IEC 851-4	JIS C 3003		IEC 851-4
						1,0 mm
Resistance to solvent			12-3.1			Pass
Resistance Freon R22			16-4.1			Pass
Transformer oil resistance			20-6.2		With top: Sivamid 595	Pass

Safety and Handling

ELANTAS Italia, Srl. manufactures high-performance enamels for use as magnet wire coatings. Liquid enamels contain hazardous chemicals and require care in their use. Users should read the Material Safety Data Sheet (MSDS) provided with each product. The MSDS lists the hazardous components, describes their toxicity and provides recommendations for use of personal protective equipment.

Magnet wire enamels, in general, consist of polymeric resins dissolved in organic solvents. The solvents, in their liquid form, may be combustible, toxic and/or corrosive. Their vapors will present similar hazards.

Curing, the conversion of resin into a thermoset film in a magnet wire oven, is a chemical reaction. This reaction releases chemical by-products including, but not limited to, ethylene glycol, formaldehyde, isocyanates and low molecular weight polymer. Combustion of these by-products and solvent vapors may generate oxides of carbon and nitrogen as well as other pollutants. The user must take appropriate steps to handle these and all other emissions in compliance with applicable environmental and safety regulations.

Enameled magnet wire may also present health and safety risks. Abrasion of the wire may generate toxic or irritating dust. Exposure to soldering temperatures may release isocyanates and other by-products. Again, the user must address these concerns in compliance with appropriate regulations.

Storage and Shelf Life

ELANTAS Italia, Srl magnet wire enamels should be stored in sealed containers at or below 30ºC. Under these conditions, ELANTAS Italia, Srl warrantees the products as having the following shelf life from the date of shipment:

Self Bonding (SB) Magnet Wire Enamels	Twelve Months
Polyvinylformal (PVF or PVA) Magnet Wire Enamels	Twelve Months
Nylon (PA) Magnet Wire Enamels	Twelve Months
Polyurethane (PU) Magnet Wire Enamels	Twelve Months
Polyesterimide (PEI) Magnet Wire Enamels	Twelve Months
Solderable Polyesterimide (PEW) Magnet Wire Enamels	Twelve Months
Polyester (PE) Magnet Wire Enamel	Twelve Months
Polyamideimide (PAI) Magnet Wire Enamels	Six Months

Containers that are vented to the atmosphere should employ drying tubes to prevent the entrance of excessive moisture.