HARDLAC B135-PR

Electrical insulation varnish

PRODUCT TDS

DOLPHIN COATINGS

معرفی مختصر HARDLA B135-PR

HARDLAC B135-PR یک محصول تک جزئی، حلال پایه و کوره ای است. که بر اساس رزین اپوکسی مدیفای شده تولید میگردد. کلاس حرارتی این محصول در گروه H (180 درجه سانتیگراد) و در فام اخرایی با ویسکوزیته پایین مورد استفاده قرار میگیرد. طیف کاربرد این محصول برای انواع استاتورها، ترانسفورمرها و سایر سیم پیچ‌ها و مصارف عمومی است که سختی ، مقاومت الکتریکی و حرارتی از ویژگی‌های بارز این محصول میباشد .

جهت اعمال و کاربرد HARDLAC B135-PR از رقیق کننده SOLVLAC S200 استفاده گردد و میزان ترکیب رقیق کننده بسته به روش کاربرد- قلم مو ، غوطه وری ، اسپری یا اسپری بدون هوا متفاوت است . این محصول را دور از نور مستقیم آفتاب و شعله و در شرایط استاندارد انبار میتوان بمدت یکسال نگهداری نمود .

SIMILAR PRODUCT

1. HARDLAC B135-CL
2. HARDLAC B135-CL-ES
3. HARDLAC B135-T
4. HARDLAC B135-T-ES
5. HARDLAC B135-PG
6. HARDLAC B135-PB

HARDLAC B135-PR

Product description

HARDLAC B135-PR is a solvent based binder varnish. The product consists of epoxy binder, the so-called solid and a solvent mixture. After evaporation of the solvent e.g. by application of heat, the resin polymerises to give a cured film.

Reducer SOLVLAC S200 will be available for the dilution of the varnish. It is designed for use in applications where high bond strength and or good moisture and chemical resistance is required .

Areas of application

Preferred applications for HARDLAC B135-PR are:

- **Transformer**
- **Stator**
- **Drive in the chemical industry**
- **General use**

Properties of cured resin

The tough-hard material displays very good mechanical and dielectric properties even under high temperatures. Windings impregnated with HARDLAC B135-PR show good bond strength.

In addition, the cured material displays good resistance to the effects of liquid chemicals and their vapours. Owing to the high temperature index of 180°C HARDLAC B135-PR can be used for electrical machines from 130°C to 180 °C.

Storage and stability

Under appropriate storage conditions, protected from humidity and solar radiations, HARDLAC B135-PR and reducer SOLVAC S200 can be stored in unopened container at 20-25 °C for 12 months.

Flow time (viscosity)

HARDLAC B135-PR is produced with a relative low viscosity: 150-130 sec measured with Ford 4-cup at 21 °C (ø 4 mm acc. ASTMD1200).

The kind of processing, e.g. with higher ambient temperatures, leads to rising losses of solvent and increased flow time.

In this case it will be necessary to adjust the flow time by addition of reducer SOLVLAC S200.

Processing methods

HARDLAC B135-PR is generally applied by drop and brush or dip method during manufacturing of composite insulation. Application by brushing is common for application as laminating varnish on the machine overhang winding. Viscosity of HARDLAC B135-PR can be reduced by addition of SOLVLAC S200. The curing of HARDLAC B135-PR film can be done in a convey orised baking oven or air circulated ovens.

HARDLAC B135-PR displays low susceptibility to the influence of foreign substances, such as punching grease, oils or primers, however, contamination of the varnish should be avoided as much as possible. After drainage time of 15-45 minutes at room temperature, the product is cured in the circulating-air oven at the temperatures and periods of time given. For large objects or those with a complicated winding structure a two stage curing process is recommended to ensure removal of the solvents.

Properties of varnish as supplied

Property	Value	Unit
Shelf life at 25° C	12	Months
Appearance/ Color	Liquid/Red	
Density at 23°C, DIN 51757	940-960	g/l
Content of binder (1g/1h/130°C), ISO 3251	40-44	%
Viscosity (Brookfield at 21°C, spindle 2, speed 20 rpm)	200-350	cps
Flash point	25	°C

Dielectric properties in Cured condition

Test criterion	Condition	Value	Unit
Volume resistivity after water immersion test following IEC 60464 part 2	Initial value 7 d storing	$>10^{16}$ $>10^{15}$	Ωxcm
Volume resistivity at elevated temperature test following IEC 60464 part 2	155 C° 180 C°	$>10^{11}$ $>10^{11}$	Ωxcm
Electrical strength, after water immersion test following IEC 60464 part 2	Initial value 24 h storing	> 140	KV/mm
Electrical strength, at elevated temperature test a following IEC 60464 part 2	155 C° 180 C°	> 100 > 100	KV/mm
Temperature at relative permittivity tang °= 0,1 test following IEC 60250	50Hz 1KHz 10 KHz	- > 130 > 207	°C

Test criterion	Condition	Value	Unit
Resistance to vapour of solvents following IEC 60464 part 2	Acetone Xylene Methanol Hexane Carbon disulphide	resistant resistant resistant resistant resistant	-
Water absorption following IEC 62	at 23 °C 0,5 h at 100 °C	<5 < 10	mg

Curing condition

Surface	140 °C	160 °C	For ensuring cured material properties it needs 60 minutes pre-drying at room temperature before curing Processing.
	45 min	30 min	

HARDLAC B135-PR

Mechanical properties in cured condition

Test criterion	Condition	Value	Unit
Bond strength	23 °C 155°C 180 °C	> 80 - -	N
Mandrel test (3 mm)	23 °C	140	°
Adhesion on steel UNI EN ISO 2409 Double application	40 µ	80	%

Temperature index

Test criterion	Condition	Value
Proof voltage IEC 60172	600 V	-

Resistance against solvents & chemical

Solvent resistance as per IEC 60455-2	10% H2SO4 2% NaOH	No Change in colour No Change in colour	- -

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