

Product Information

GRC59 series

E75225

Impregnating Varnish
Electrical Insulation System
Dip & Bake / Roll Dip

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Product Description

GRC59 is a very unique, low viscosity solventless dipping varnish for hermetic, general purpose motors and transformers.

Technically the product is an epoxy emulsion in water. The unique characteristics of this product that differentiate it from solvent containing and other water borne varnishes are as follows:

- **No regulated solvents**

Unlike other types of water borne or soluble varnishes, GRC59 does not need or utilize the use of any solvents to keep the resin in solution with the water carrier.

This feature allows the user to avoid TITLE V air pollution permitting and the need to keep the varnish “in-balance”.

- **No pH concerns**

Tank maintenance with GRC59 is not an issue. pH does not need to be tested or adjusted at any time. Behaviour or other water based epoxy and polyester varnishes can be erratic if neutralization is not maintained and controlled.

- **Tank Stability**

The catalyst system in GRC59 does not require ionic neutralization. The combination of resins and surfactants that comprise the base polymer has allowed users of GRC59 to enjoy a truly maintenance free, high performance varnish—in excess of one year without any replenishment.

- **Dripping / Icicles**

GRC59 is comprised of both medium and higher molecular weight epoxy resins. Once the liquid phase is exposed to the air, the water readily evaporates and the resin coalesces into a coherent film.

The higher molecular weight resin does not allow the product to drip or run once coalescence occurs.

No drainage stalactites are formed during the baking cycle ensuring a very clean finish both on the exterior of the lamination pack, copper end windings and the inner bore minimizing the need for post cure clean up.

Approvals

GRC 59 is featured in a series of complete insulation systems designated as follows:

- FILE E150894 (UL 1446)
SENTRY SYSTEMS FOR
ELECTRICALINSULATION
- FILE SA11739 (UL 984 & 984A)
SENTRY SYSTEMS FOR HERMETIC
MOTORS

Packaging

Elantas GRC59 is currently sold in 200kg drums or 1000kg totes for ease of use.

Health & Safety

Refer to Elantas Zhuhai Material Safety Data Sheet (MSDS) for GRC59.

Shelf life

Stored in unopened containers; 12months
Drum stock should be stored at or below 25°C
away from direct sources of heat

Properties of component as supplied

Property	
APPEARANCE	WHITE OPAQUE LIQUID
VISCOSITY @ 25°C BROOKFIELD VISCOMETER	12 - 2000CPS (DEPENDANT ON SOLID CONTENT)
NON-VOLATILE CONTENT	10 - 50%
SPECIFIC GRAVITY	1.014 - 1.081



MECHANICAL PROPERTIES

BOND STRENGTH (ASTM D2519) HELICAL COILS	23° C	60 LBS
	100° C	45 LBS
	130° C	36 LBS
	150° C	35 LBS
	180° C	14 LBS
	200° C	10 LBS
	220° C	9 LBS
BOND STRENGTH (IEC 1033) TWISTED COILS	23° C	88 LBS
	100° C	82 LBS
	130° C	76 LBS
	150° C	67 LBS

ELECTRICAL PROPERTIES

DIELECTRIC BREAKDOWN (ASTM D 115)	2500 volts/mil
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Sample thickness tested on steel panels. Experience has shown that for solid and semi-solid materials, the dielectric strength varies inversely as a fraction power of the specimen thickness

	DIELECTRIC CONSTANT					DISSIPATION FACTOR				
	25°C	50°C	75°C	100°C	125°C	25°C	50°C	75°C	100°C	125°C
60Hz	3.707	3.814	4.020	4.333	5.783	0.005	0.001	0.013	0.050	0.352
10 ³ Hz	3.653	3.760	3.957	4.226	4.933	0.008	0.001	0.010	0.022	0.075
10 ⁴ Hz	3.599	3.733	3.904	4.127	4.602	0.015	0.112	0.011	0.018	0.043

CHEMICAL PROPERTIES

Refrigerant	Percent Extracted
R-22	< 0.5
R-134a	< 0.5
R-404a	< 0.5

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