

# Technical Data Sheet



## **GRC 59**

Hermetic Epoxy Impregnating Resin

**ELANTAS Malaysia Sdn. Bhd.**

Lot 550, Jalan Keretapi Lama,  
Batu 7 3/4, Jalan Kapar,  
41300 Klang,  
Selangor Darul Ehsan, Malaysia  
[www.elantas.com](http://www.elantas.com)

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### Product Description

GRC 59 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 Characteristic of this product that Differentiate it from solvent containing and Other water borne varnishes are as follows.

### Features and Benefits

- No regulated solvents

Unlike other types of water borne or Soluble varnishes, GRC 59 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 TITLEV Air pollution permitting and the need to Keep the varnish “in-balance”.

- No pH concerns

Tank maintenance with GRC 59 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 GRC 59 does not require ionic neutralization. The combination of resins and surfactants that comprise the base polymer has allowed users of GRC 59 to enjoy a truly maintenance free, high performance varnish-in excess of one year without any replenishment.

- Dripping/ Icicles

GRC 59 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.

### Curing cycle

Cure for 4 hours at 149°C or for 2 hours at 163°C

Cure schedule above is based on time after the unit reaches the specified temperature and are recommendations only

### Packaging

Elantas Malaysia GRC 59 are currently sold in 200 Kg drums.

### Health & Safety

Refer to Elantas Malaysia Material Safety Data Sheet (SDS) for GRC 59.

### Shelf life

This resin should be stored at below 25°C in a dry controlled environment out of direct sunlight to pass a shelf life of twelve(12) months.

Properties of component as supplied

Property	Conditions	Value	Units
Appearance		White opaque emulsion	
Viscosity Brookfield	25°C	600-2000	cPs
Non volatile content	3g-1h-149°C	48-52	%
Specific gravity		1.014-1.081	
Viscosity reducer		Deionized water	

Cured Resin Properties

MECHANICAL PROPERTIES	Conditions	Value	Units
Bond Strength (ASTM D2519) Helical coils	25°C	267	N
	100°C	200	N
	150°C	155	N

ELECTRICAL PROPERTIES	Conditions	Value	Units
Dielectric strength	ASTM D149	4000	Volts/mils
Dielectric strength	ASTM D149 After 24 hours in water	3800	Volts/mils

Dielectric Constant					
ASTM D150	25°C	50°C	75°C	100°C	125°C
60 Hz	3.7	3.8	4.0	4.3	5.8

Dissipation Factor					
ASTM D150	25°C	50°C	75°C	100°C	125°C
60 Hz	0.01	0.01	0.01	0.05	0.35

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

ELANTAS Malaysia Sdn. Bhd. warrants the chemical composition of its products within stated tolerances, but does not guarantee that a product will be appropriate for any particular application. Any recommendation, performance of tests or suggestion is offered merely as a guide and is not a substitute for a thorough evaluation by the user. No representative of ELANTAS Malaysia Sdn. Bhd. has the authority to offer a warranty that a product will perform satisfactorily in manufacturing a product and no such representation should be relied upon.

Underwriters Laboratories Recognition (ELANTAS File E75225)

Wire construction	Helical Coil	Twisted Pair
NEMA MW28		130
NEMA MW35	180	180

UL recognized insulation systems-ELANTAS File E87039

Thermal Class	System
Class 130	Sentry 130-I, Sentry 130-II, Sentry 130-III
Class 155	MEGA II, Sentry 155-I
Class 180	Sentry 180-V, Sentry 180-VI, Sentry 180-VII, Sentry 180-VIII, Sentry 180P, PDG14
Class 200	Sentry 200-I

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