ELANTAS

Technical Data Sheet

Elan-tron MC 4245 (FR) IN + Hardener 46

(100: 20±0.2)

Room Temperature Curing, Filled, Flexible and Flame retardant Epoxy System for Potting

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Description

Elan-tron MC 4245 (FR) IN is medium viscosity, filled liquid epoxy based compound, highly suitable for the electrical and electronics industry. It has been specially formulated to offer customer a system, which does not require any further preparation at their end. It is filled with pre-dried inorganic fillers, thoroughly blended and entrapped air completely removed under high vacuum.

With Hardener 46 it offers the following advantages:

- Highly flexible cured mass
- Pore and void free potting
- Pourable consistency
- Good adhesion to various material
- Good resistance to water and chemicals
- Low shrinkage
- Improved crack resistance
- Good thermal conductivity
- Good thermal shock resistance

Areas of Application

Ideal for potting, sealing and casing of small and medium size electrical and electronic components such as:

- LED driver assemblies
- Auto electrical & electronic components
- PCB assemblies

Properties of cured material

The cured mass of Elan-tron MC 4245 (FR) IN + Hardener 46 shows good electrical & chemical properties. Because of special type of fillers in Elan-tron MC 4245 (FR) IN, the cured mass shows good thermal shock resistance, reduced shrinkage & good thermal conductivity.

Application Method

Elan-tron MC 4245 (FR) IN contains filler, which have tendency to settle on long storage. Elan-tron MC 4245 (FR) IN, should therefore, be stirred to a homogenous mixture, each time it is drawn from the container. Hardener 46 should be mixed in Elan-tron MC 4245 (FR) IN compound at room temperature & the mixture should be used within the pot life. It is recommended to de-gas the resin/hardener mix under vacuum to get bubble free potted components.

Properties of Elan-tron MC 4245 (FR) IN as supplied:

Colour & Appearance [*]	DBI 1001 [**]		Black filled resin
Viscosity at 25°C by Brookfield [*] at 25 °C at 55 °C	DBI 3005 [**]	mPa.s	 8000 – 14000 800 – 1500
Density at 25°C[*]	DBI 3047A[**]	g/ml	1.50 – 1.60
Flash point (Open cup)	DIN 51584	°C	>100
Storage stability [*]	When stored in original sealed container at R.T.	months	06
[*] These properties form our sales specification [**] DBI are our internal test methods and are available on request			

Properties of Hardener 46 as supplied:

Color & Appearance [*]	DBI 1001 [**]		Dark brown to orange liquid
Viscosity at 25 °C[*]	DBI 3005 [**]	mPa.s	400 – 750
Density at 25 °C[*]	DBI 3047A[**]	g/ml	0.92 – 1.02
Amine value[*]	DBI 1012[**]	mg KOH/g	380 - 430
Flash point (Open cup)	DIN 51584	°C	> 100
Storage stability [*]	When stored in original sealed container at R.T.	months	12

Mixing Proportion & Pot Life:

			Elan-tron MC 4245 (FR) IN : Hardener 46
Mixing Ratio (Resin : Hardener)		Parts by Wt	100 : 20 ± 0.2
Initial Viscosity of mixture at 25^{o}C	DBI 3005[**]	mPa.s	4000 – 8000
Pot life at 25°C for 240 g mix [*]	DBI 1019 [**]	min	140 – 160
Gel time at 25°C for 240 g mix [*]	--	min	170 – 190
Temperature rise at 25°C (exotherm)	--	°C	55 – 65

Recommended Curing Cycle:

24 h at RT (25°C) **or** 4 h at 60°C

The curing schedules suggested are for general guidance. The curing schedule should be decided in each case depending upon the mass of resin/hardener mix in components, ambient temperature conditions etc.

Properties of the Cured Resin:

Specimen Curing - 4 h at 60°C

Density at 25ºC	ASTM D 792	g/cm^3	1.40 – 1.50
Tensile strength	ISO 527	MPa	0.40
Elongation at break	ISO 527	%	40 – 50
Flexural strength	ISO178	MPa	Flexible
Water absorption (after 2hr/100°C)	ISO 62	%	0.20 – 0.30
Hardness	ISO 868	Shore A	25 – 35
Thermal conductivity	ASTM C 518	W/m.K	0.50 – 0.55
Flammability	UL 94 V_0	mm	13

Dielectric Properties:

Specimen Curing – 4 h at 60°C

Dielectric strength IEC 60243 with 3 mm specimen	at RT	kV/mm	13
Volume resistivity at 500 V DC as per IEC 60455-2	at RT	ohm.cm	10^{10}
Dielectric constant at 30 V/1 kHz as per IEC 60455-2	at RT at 155^0C	-	NT NT
Dielectric loss factor 30 V/1 kHz as per IEC 60455-2	at RT at 155^0C	-	NT NT

Packaging:

Elan-tron MC 4245 (FR) IN : 25 kg in open mouth bucket.
Hardener 46 : 25 kg in polycontainers

Safe Handling:

Elan-tron MC 4245 (FR) IN has hardly any effect on skin & mucous membrane. Hardener 46 is caustic and will affect skin. For detailed information on safe handling, kindly refer to our Technical Information “Safe Processing with Resins and Hardener” & material safety data sheets of Elan-tron MC 4245 (FR) IN & Hardener 46.

Disclaimer

This information is intended only for general guidance in the application of our product. It has been obtained by careful investigation and represents the present state of our knowledge and experience. Because of the large number of possible methods of application and processing we are not able to assume responsibility in any one particular case for either the technical results or the patent rights situation applicable to the country under consideration.

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