ELANTAS
Electrical Insulation

Product Information

Casting Compound

Elan-tron®

PU 4264 FR / PH 4900 100:16,6

Semi-rigid polyurethane, UL recognized (UL 94 class V0)

Product Description

Elan-tron® PU 4264 FR is liquid solvent free 2 component system. After curing with hardener Elan-tron® PH 4900 produces a medium-hard impact resistant compound with flame retardant properties to the UL 94 V0 standard.

The system meets the requirement of ROHS.

Areas of Application

Elan-tron® PU 4264 FR is suitable for casting of small and mid-size transformers to Insulation Class B (130°C). The high impact resistance of the cured compound protects the potted devices from mechanical stress and shock. Elan-tron® PU 4264 FR is flame retardant and satisfies the requirements of UL 94 standard to the level of V0. Under the File E 140720 the material is listed by UL for „all colour recognition“ For this Elan-tron® PU 4264 FR has no halogen or antimony or phosphorous containing materials in the formulation and creates no difficulty in relation to the end of life disposal under the WEEE directive.

Properties of the Insulating Material

- Tough resistant casting compound
- Low Shrinkage
- Flame Self-extinguishing to UL94 V0
- UL registered under File No E 140720
- Low processing viscosity
- Good moisture and chemical resistance
- Good dielectric properties
- Good adhesion
- Insulating Material Class B(130°C)

Processing Methods

Preparation of components: The components to be potted should be clean dry and free from grease. Compatibility between the resin and all materials of the component should be checked prior to use.

Preparation of Material: Elan-tron® PU 4264 FR contains filler materials which tend to settle and must be stirred in the original container to restore the original homogenous composition before processing.

Mixing: Elan-tron® PU 4264 FR with the Hardener Elan-tron® PH 4900 should be mixed in the prescribed ratio. After intensive stirring or mixing the compound is ready for use. During mixing, care should be taken to avoid including air in the mixture.

Application: Elan-tron® PU 4264 FR/ Elan-tron® PH 4900 can be applied either manually or with suitable mixing and dosing equipment. An accelerator can be pre-mixed to reduce curing time.

Curing conditions:

- at Room Temperature 10-14 h
- at 90°C 1-2 h

PU compounds cured at Room temperature should not be subjected to mechanical or electrical loads or tests for 3-4 days to allow full development of cured properties. To reduce this time post curing at 80°C for 12-16 hours is possible.

Storage:

Elan-tron® PU 4264 FR and Elan-tron® PH 4900 can be stored in closed original containers to protect the material against humidity for at least 6 months. The shelf life is indicated on the label of the containers supplied.
Opened containers of the Hardener Elan-tron® PH 4900 should be used up as soon as possible because moisture in air reduces reactivity.
The Hardener Elan-tron® PH 4900 might form crystals at temperatures below 5°C. Heating the entire contents of the drum for a short time to 70 °C will recover the complete liquid state.

System Specifications

Property	Condition	Resin	Hardener	Units
Viscosity DIN 53019	25°C	4000 ± 1000	110 ± 30	mPa*s
Density DIN EN ISO 2811-2	20°C	1.58 ± 0.05	1.23 ± 0.05	g/cm^3
Shelf Life	23°C	6	6	months

Typical System Characteristics

Property	Condition	Value	Units
Color resin		black	
Color hardener		brown transparent	
Viscosity IO-10-50 resin	25°C	4000 ± 1000	mPa*s (0,17/1,7 sec^{-1})
Viscosity IO-10-50 hardener	25°C	-/140	mPa*s (0,17/1,7 sec^{-1})
Mix Ratio by weight (resin : hardener)		100:16,6	Parts by weight
Mix Viscosity DIN 53019	25°C	1900 ± 500	mPa*s
Process time (15 ml mixed volume)	23°C	25-30	min

Typical Cured System Characteristic (Post cure before measurement 24h/23°C + 16h/80°C)

Property	Condition	Value	Units
Thermal Conductivity DIN 52613		0,5	W/m*K
Glass transition temperature IEC 61006		7	°C
Thermal index IEC 216 flexural strength	% weight loss	140	°C
Linear coefficient of expansion Beck Test M 56	above tg	120 x 10^{-6}	K^{-1}
Specific Gravity DIN 16945	20°C	1.53 ± 0.02	g/cm^3
Hardness ISO 868		55 ± 5	Shore D
Tensile Strength DIN 53455/457		5.3	MPa
Bending Strength		-	MPa
Volume resistivity IEC 60455 Part 2	23°C 50 % rh 23°C (7 d storage in water)	10^{14} -	Ω*cm Ω*cm
Dielectric Constant ε_r IEC 60250	23°C / 50 Hz 23°C / 1K Hz	5.3 -	
Dielectric Strength IEC 60250	23°C 50% rh 23°C (7 d storage in water)	21 -	kV/mm kV/mm
Dissipation factor tan-δ IEC 60250	50Hz, 23°C, 50% rh 1 KHz 23°C, 50% rh 1MHz,23°C, 50% rh	0.091 - -	
Dissipation factor tan-δ IEC 60250 7 days storage in water	50Hz, 23°C, 50% rh 1 KHz 23°C, 50% rh 1MHz,23°C, 50% rh	- - -	
Tracking resistance IEC 60112		600	CTI
Water absorption ISO 62	24h RT	0.22	%

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