

Product Information

Casting Compound

Elan-tron®

PU 4254 FR / PH 4900

100:20

Medium hard polyurethane, , UL recognized (UL 94 class V0)

Product Description

Elan-tron[®] PU 4254 FR with Hardener Elan-tron[®] PH 4900 produces a medium hard casting compound with good resistance against water, chemicals, transformer oil, heating oil and fuel.

The system meets the requirement of ROHS.

Areas of Application

Elan-tron[®] PU 4254 FR is specially suitable for casting of small and medium size transformers. The good resistance to water and hydrolysis of Elan-tron[®] PU 4254 FR suits it very well for casting of underwater pumps such aquarium or garden pumps. Elan-tron PU 4254 FR with Hardener Elan-tron PH 4900 meets the UL 94 V0 standard and is recognised under file E 140720.

Properties of the Insulating Material

- Tough casting compound
- Low Shrinkage
- Medium processing viscosity
- Self-extinguishing to UL 94 V0
- UL Approved (File 140 720)
- Good dielectric properties
- Good resistance to chemicals, oil and hydrolysis
- 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 4254 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 4254 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 4254 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 6-8 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.

Storage:

Containers filled with Elan-tron[®] PU 4254 FR and Elan-tron[®] PH 4900 can be stored in closed 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	6500 ± 1500	110 ± 30	mPa·s
Density DIN EN ISO 2811-2	20°C	1.57 ± 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	
Mix Ratio by weight (resin : hardener)		100:20	Parts by weight
Mix Viscosity DIN 53019	23°C	2500 - 2900	mPa·s
Process time (200 g mixture)	23°C	40 - 50	min

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

Property	Condition	Value	Units
Thermal Conductivity DIN 52613		0,58	W/m·K
Glass transition temperature IEC 61006		30	°C
Thermal index IEC 216 flexural strength	% weight loss	139	°C
Linear coefficient of expansion Beck Test M 56	above tg	-	K ⁻¹
Specific Gravity DIN 16945	20°C	1.64 ± 0.05	g/cm ³
Hardness ISO 868		80 ± 10	Shore D
Tensile Strength DIN EN ISO 527-1	23 °C	23,4	MPa
Tensile Modulus DIN EN ISO 527-1	23 °C	1230	MPa
Tensile Stress at break DIN EN ISO 527-1	23 °C	22,6	MPa
Elongation at break DIN EN ISO 527-1	23 °C	11	%
Bending Strength		48	MPa
Volume resistivity IEC 60455 Part 2	23°C 50 % rh 23°C (7 d storage in water)	2.1 x 10 ¹⁵ 4.6 x 10 ¹⁰	Ω·cm Ω·cm
Dielectric Constant ε _r IEC 60250	23°C / 50 Hz 23°C / 1K Hz	3.8 -	
Dielectric Strength IEC 60250	23°C 50% rh 23°C (7 d storage in water)	30 -	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	0.02 - -	
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 M	CTI
Water absorption ISO 62	24h RT	0.25	%

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