

Product Information

Casting Compound

Elan-tron[®]

PU 4110 / PH 4900

100:20

High flexibility at low temperatures, suitable up to 150 °C

Product Description

Elan-tron® PU 4110 with hardener Elan-tron® PH 4900 (standard hardener) or PH 4920 produces a casting compound with high flexibility at low temperature and rubber-like properties to -50°C.

The system meets the requirement of ROHS.

Areas of Application

Elan-tron® PU 4110 has excellent low-temperature flexibility and high adhesion on various substrates as well as high temperature resistance to 150°C. It is therefore suitable for equipment operating in the range -50 to +150°C and pressure sensitive devices including those in explosion protected systems. The excellent chemical resistance allows use of Elan-tron® PU 4110 in damp, alkaline and acid conditions such as grain silos.

Properties of the Insulating Material

- Casting compound with rubber-like properties
- Low Shrinkage
- Good dielectric properties
- Very good adhesion
- Low temperature flexibility to -50°C
- Long term Thermal Resistance at 150°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 4110 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 4110 with the Hardener Elan-tron® PH 4900 or PH 4920 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 4110/ Elan-tron® PH 4900 or PH 4920 can be applied either manually or with suitable mixing and dosing equipment. An accelerator can be pre-mixed to reduce curing time. The special flow and degassing properties are generally suitable for manual potting operation where it is not possible to de-gas the resin/hardener mixture (by vacuum) before curing

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. To reduce this time post curing at 80°C for 12-16 hours is possible.

Storage:

Containers filled with Elan-tron® PU 4110 and Elan-tron® PH 4900 or PH 4920 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/PH 4920 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 ± 1000	110 ± 30	mPa.s
Density DIN EN ISO 2811-2	20°C	1.12 ± 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		white-beige	
Color hardener		brown transparent	
Viscosity IO-10-50 resin	25°C	6800/6300	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)		100:20	Parts by weight
Mix Viscosity DIN 53019	25°C	4900	mPa.s
Process time (200gr mixture)	23°C	40	min

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

Property	Condition	Value	Units
Thermal Conductivity DIN 52613		0,20	W/m.K
Glass transition temperature IEC 61006		< -75	°C
Thermal index IEC 216	flexural strength	150	°C
Linear coefficient of expansion Beck Test M 56	above tg	150-180 x 10 ⁻⁶	K ⁻¹
Specific Gravity DIN 16945	20°C	1.16 ± 0.02	g/cm ³
Hardness ISO 868		75 ± 5	Shore A
Tensile Strength DIN EN ISO 527-1	23 °C	3,24	MPa
Tensile Modulus DIN EN ISO 527-1	23 °C	7,76	MPa
Tensile Stress at break DIN EN ISO 527-1	23 °C	3,24	MPa
Elongation at break DIN EN ISO 527-1	23 °C	71	%
Bending Strength		---	MPa
Volume resistivity IEC 60455 Part 2 7 days storage in water	23°C 53°C	2.2 x 10 ¹⁴ 1.6 x 10 ¹⁴	Ω.cm Ω.cm
Dielectric Constant ε _r IEC 60250	23°C / 50 Hz 23°C / 1K Hz	3.16 2.92	
Dielectric Strength IEC 60250	23°C 50% rh 23°C (7 d storage in water)	33 22.3	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	0.0298 0.0247 0.0254	
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	0.0314 0.0254 0.0283	
Tracking resistance IEC 60112		600	CTI
Water absorption ISO 62	24h RT	0.35	%

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