ELANTAS
Electrical Insulation

Product Information

Casting Compound

Elan-tron®

PU 4025 / PH 4900 100:25

Soft flexible polyurethane

Product Description

Elan-tron® PU 4025 with hardener Elan-tron® PH 4900 produces a soft flexible casting compound with low shrinkage and good electrical insulation.

The system meets the requirement of ROHS.

Areas of Application

Elan-tron® PU 4025 has elastic properties suitable for casting of mechanically sensitive components which should have pressure from shrinkage due temperature changes or volume contraction or expansion coefficients differences between materials. The casting material can reduce material stress. The material is also suitable for components subject to severe acceleration forces in impact drills or automotive use and sensors. The elastic properties also provide damping of vibration.

Properties of the Insulating Material

- Flexible casting compound

- Low Shrinkage

- Low processing viscosity

- Good dielectric properties

- Good adhesion

- Low temperature flexibility to -40°C

- Thermal Resistance 115°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 4025 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 4025 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 4025/ 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
- at 90°C 1-1.5 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 4025 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	1050 ± 150	110 ± 30	mPa*s
Density DIN EN ISO 2811-2	20°C	1.40 ± 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		dark blue	
Color hardener		brown transparent	
Viscosity IO-10-50 resin	25°C	1200/1200	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)		100:25	Parts by weight
Mix Viscosity DIN 53019	25°C	800	
Process time (15 ml mixture)	23°C	150	min

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

Property	Condition	Value	Units
Thermal Conductivity DIN 52613		0,36	W/m*K
Glass transition temperature IEC 61006		-10	°C
Thermal index IEC 216 flexural strength	% weight loss	-	°C
Linear coefficient of expansion Beck Test M 56	above tg	216 x 10^{-6}	K^{-1}
Specific Gravity DIN 16945	20°C	1.36 ± 0.05	g/cm^3
Hardness ISO 868		70 ± 10	Shore A
Tensile Strength DIN EN ISO 527-1	23 °C	3,01	MPa
Tensile Modulus DIN EN ISO 527-1	23 °C	8,11	MPa
Tensile Stress at break DIN EN ISO 527-1	23 °C	3,01	MPa
Elongation at break DIN EN ISO 527-1	23 °C	50	%
Bending Strength		-	MPa
Volume resistivity IEC 60455 Part 2	23°C	2 x 10^{13}	Ω*cm
Dielectric Constant ε_r IEC 60250	23°C / 50 Hz 23°C / 1K Hz	4,2	
Dielectric Strength IEC 60250	23°C 50% rh	22	kV/mm
Dissipation factor tan-δ IEC 60250	50Hz, 23°C, 50% rh 1 KHz 23°C, 50% rh 1MHz,23°C, 50% rh	- - -	
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	0.36	%

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