EN

Product Information

Elan-tron®
PU 04272/PH 04272 100:33
(Epoxylite ® EIP 4272 RESIN/Epoxylite ® EIP 4272 HARDENER)

2-component polyurethane potting compound

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ELANTAS Electrical Insulation

Resin	Hardener	Mixing ratio by weight
PU 04272	**PH 04272**	**100:33**

Application: Sealings and encapsulation of electrical and electronic components. Insulators. Cable jointing.

Processing: Manual and/or automatic casting. Under vacuum casting. Room temperature curing.

Description: Two component system filled, semi-rigid. Good electrical and mechanical properties. Thermal class F (155°C) The system is RoHS conform (European directive 2002/95/EC).

SYSTEM SPECIFICATIONS

Resin						
Viscosity at:	25°C		IO-10-50 (EN13702-2)	mPas	1.200	2.000
Density at:	25°C		IO-10-51 (ASTM D 1475)	g/ml	1,16	1,20
Gelation time	25°C	100 ml	IO-10-52a (UNI 8701)	min	30	40
Hardener						
Viscosity at:	25°C		IO-10-50 (EN13702-2)	mPas	60	120

TYPICAL SYSTEM CHARACTERISTICS

Processing Data						
Mixing ratio by weight			for 100 g resin	g	100:33	
Mixing ratio by volume			for 100 ml resin	ml	100:33	
Hardener Colour					Pale yellow	
Density at: 25°C Hardener			IO-10-51 (ASTM D 1475)	g/ml	1,20	1,22
Pot life (doubled initial viscosity)		25°C	IO-10-50 (EN13702-2) (*)	min	10	15
		40°C		min	8	12
Initial mixture viscosity at:		25°C	IO-10-50 (EN13702-2)	mPas	1.000	1.600
		40°C		mPas	500	700
Gelation time	25°C	(15ml;6mm)	IO-10-73 (*)	h	1,0	2,0
Demoulding time	25°C	(15ml;6mm)	(*)	h	3,0	4,0
Suggested curing cycles			(**)	24 hours at 25°C		

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TYPICAL CURED SYSTEM PROPERTIES

Properties determined on specimens cured: 24 h TA + 15 h 60°C

Surface				Bright	
Density 25°C		IO-10-54 (ASTM D 792)	g/ml	1,19	1,23
Hardness 25°C		IO-10-58 (ASTM D 2240)	Shore A/15	40	45
Glass transition (Tg)		IO-10-69 (ASTM D 3418)	°C	5	15
Water absorption (24h RT)		IO-10-70 (ASTM D 570)	%	0,15	0,20
Water absorption (2h 100°C)		IO-10-70 (ASTM D 570)	%	0,70	0,09
Linear thermal expansion (Tg +10°C)		IO-10-71 (ASTM E 831)	10^-6/°C	190	210
Dielectric constant at:	25°C	IO-10-59 (ASTM D 150)		4,5	5,5
Loss factor at:	25°C	IO-10-59 (ASTM D 150)	x 10^-3	35	45
Volume resistivity at:	25°C	IO-10-60 (ASTM D 257)	Ohm x cm	5 x 10^14	9 x 10^14
Dielectric strength	25°C	IO-10-61 (ASTM D 149)	kV/mm	20	22
Tracking index		IEC 60112	CTI	> 600	
Flexural strength		IO-10-66 (ASTM D 790)	MN/m²	n.a.	n.a.
Strain at break		IO-10-66 (ASTM D 790)	%	n.a.	n.a.
Flexural elastic modulus		IO-10-66 (ASTM D 790)	MN/m²	n.a.	n.a.
Tensile strength		IO-10-63 (ASTM D 638)	MN/m²	2,5	3,5
Elongation at break		IO-10-63 (ASTM D 638)	%	75	85

IO-00-00 = Elantas Camattini's test method. The correspondent international method is indicated whenever possible.
nd = not determined na = not applicable RT = TA = laboratory room temperature (23±2°C)
Conversion units: 1 mPas = 1 cPs 1MN/m2 = 10 kg/cm2 = 1 MPa

(*) for larger quantities pot life is shorter and exothermic peak increases
(**) the brackets mean optionality
(***) the maximum recommended operating temperature is given on the basis of available laboratory information. Users should make their own assessments to verify the real component thermal class which is the result of the applied construction technology and used protective materials.

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Instructions: In pre-filled products it is good practice to check and carefully rehomogenize the material if some settling is present. Add the appropriate quantity of hardener to the resin, mix carefully. Avoid air trapping. For some applications it can be useful to pre-heat the components and/or carry out a dearation step under vacuum of the mixture before casting.

Curing Post-curing: For a room temperature curing system post-curing allows fast stabilization of the material and obtainment of the best electrical and mechanical properties. During the curing process it is advisable to avoid thermal variations higher than 10°C/hour.

Storage: Polyol resins and the isocyanate based hardeners can be stored for one year in the original sealed containers stored in a cool, dry place. The hardeners may present an increase in viscosity that does not change the cured system properties. Long storage may cause filler settling mix the components before use. Both components are moisture sensitive therefore it is good practice to close the vessels immediately after each use. Moisture absorption may cause the expansion of the product during application and/or the hardener may crystallize during storage.

Handling precautions: Refer to the safety data sheet and comply with regulations relating to industrial health and waste disposal.

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