ELANTAS
Electrical Insulation

Distributeur : JBG-METAFIX

PRELIMINARY PRODUCT INFORMATION

Elan-tron®

EC 570/W 363 NF 100:32

2-components unfilled epoxy system. Bisphenol A free

Application:

Small castings of electrical components, igniters, transformers coils, transparent encapsulations.

Processing:

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

Description:

Two components unfilled epoxy system. The system is free from solvents and plasticizers. High reactivity. Low viscosity. High thermal resistance. Very good electrical characteristics. The system is RoHS compliant (European directive 2002/95/EC) and the new RoHS Directive 2011/65/EU (RoHS 2) entered into force on 21 July 2011 and requires Member States to transpose the provisions into their respective national laws by 2 January 2013.

Instructions:

Add the appropriate quantity of hardener to the resin, mix carefully. For some applications it can be useful to pre-heat the components and/or carry out a de-aeration 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:

Epoxy resin and its amine based hardener can be stored for two years in the original sealed containers stored in a cool, dry place. The hardener is moisture sensitive therefore it is good practice to close the vessel immediately after each use.

Handling precautions:

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

TYPICAL SYSTEM CHARACTERISTICS

Property	Conditions	Method	Value	UM
Mixing ratio by weight		for 100 g resin	100:32	g
Mixing ratio by volume		for 100 ml resin	100:37	ml
Colour resin			Various colours	
Colour hardener			Pale yellow/Blue	
Viscosity resin	25°C	IO-10-50 (ISO3219)	1.300÷1.700	mPas
Viscosity hardener	25°C	IO-10-50 (ISO3219)	10÷30	mPas
Density resin	25°C	IO-10-51 (ASTM D 1475)	1,12÷1,16	g/ml
Density hardener	25°C	IO-10-51 (ASTM D 1475)	0,97÷1,01	g/ml
Initial mixture viscosity at:	25°C	IO-10-50 (ISO3219)	300÷400	mPas
	40°C	IO-10-50 (ISO3219)	100÷200	mPas
Pot life	25°C (40mm;100ml)	IO-10-53 (*)	12÷18	min
Pot life (doubled initial viscosity)	25°C	IO-10-50 (ISO3219)	25÷35	min
	40°C	IO-10-50 (ISO3219)	12÷20	min
Exothermic peak	25°C (40mm;100ml)	IO-10-53 (*)	200÷230	°C
Gelation time	25°C (15ml;6mm)	IO-10-73 (*)	2÷3	h
Demoulding time	25°C (15ml;6mm)	(*)	10÷12	h
Post-curing	60°C	(**)	(15)	h
Maximum recommended thickness			3 - 5	mm

TYPICAL CURED SYSTEM PROPERTIES

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

Property	Conditions	Method	Value	UM
Surface			Bright	
Density	25°C	IO-10-54 (ASTM D 792)	1,12÷1,16	g/ml
Hardness	25°C	IO-10-58 (ASTM D 2240)	78÷84	Shore D/15
Glass transition (Tg)		IO-10-69 (ASTM D 3418)	70÷80	°C
Water absorption (24h RT)		IO-10-70 (ASTM D 570)	0,15÷0,30	%
Water absorption (2h 100°C)		IO-10-70 (ASTM D 570)	1,70÷2,00	%
Thermal shock (n°10 cycles passed)		IO-10-67 (Olyphant washer)	- 40÷+ 170	°C
Flammability		IO-10-68 (V-0)	n.a.	mm
Max recommended operating temperature		IEC 60085 (***)	155	°C
Dielectric constant at:	25°C	IO-10-59 (ASTM D 150)	3,5÷4,0	
Loss factor at:	25°C	IO-10-59 (ASTM D 150)	4÷8	x 10^-3
Volume resistivity at:	25°C	IO-10-60 (ASTM D 257)	8 x 10^15÷5 x 10^16	Ohm x cm
Dielectric strength	25°C	IO-10-61 (ASTM D 149)	26÷28	kV/mm
Flexural strength		IO-10-66 (ASTM D 790)	95÷105	MN/m²
Maximum strain		IO-10-66 (ASTM D 790)	4,5÷6,5	%
Strain at break		IO-10-66 (ASTM D 790)	8,0÷13,0	%
Flexural elastic modulus		IO-10-66 (ASTM D 790)	2.500÷3.000	MN/m²
Tensile strength		IO-10-63 (ASTM D 638)	60÷70	MN/m²
Elongation at break		IO-10-63 (ASTM D 638)	5,5÷7,5	%

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Legenda:
IO-00-00 = ELANTAS Europe's test method. The corresponding 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 operating temperature is given on the basis of laboratory information available being it function of the curing conditions used and of the type of coupled materials. For further possible information see post-curing paragraph.

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