

**PRELIMINARY PRODUCT INFORMATION**

**Elan-tron<sup>®</sup>**

**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 <sup>-3</sup> |
| Volume resistivity at:                | 25°C       | IO-10-60 (ASTM D 257)      | 8 x 10 <sup>15</sup> ÷5 x 10 <sup>16</sup> | 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/m <sup>2</sup>  |
| 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/m <sup>2</sup>  |
| Tensile strength                      |            | IO-10-63 (ASTM D 638)      | 60÷70                                      | MN/m <sup>2</sup>  |
| 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/m<sup>2</sup> = 10 kg/cm<sup>2</sup> = 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.

**Disclaimer:**

The information given in this publication is based on the present state of our technical knowledge but buyers and users should make their own assessments of our products under their own application conditions.

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