

PRODUCT INFORMATION**Elan-tron[®]****MC 4260/W 4260****100:10****(EpoxyLite[®] EIP 4260 RESIN/EpoxyLite[®] EIP 4260
HARDENER)**

2-component epoxy potting compound

Application:

Encapsulation of conventional electrical motors, linear motors and transformers. Excellent thermal cycling characteristics ensure service performance in applications requiring large bulk castings.

Processing:

Manual and/or automatic casting. Under vacuum casting with automatic mixing/dispensing devices. Room temperature or moderate temperature curing. The long pot life of the system allows the component to be preheated before application of the resin. This facilitates the impregnation of complex components.

Description:

Two component epoxy system filled with abrasive fillers. Self-extinguishing. Thermal class H (180°C). Low viscosity. High impregnation properties. Low exothermic peak. Good electrical and mechanical properties. Good heat dissipation. The system is UL 94 HB and listed (File E116643). 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:

It is advisable to pre-heat the resin at 50°C to make easier the application of the product. 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.

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 resins and their hardeners can be stored for one year and two years respectively in the original sealed containers stored in a cool, dry place. After that period or if the material has been stored in anomalous

conditions, pre-filled resins can be settled down and their use is possible, only if they are accurately re-homogenized with the help, if necessary, of a mechanical mixer. The hardeners are moisture sensitive therefore it is good practice to close the container immediately after each use.

Handling precautions:

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

SYSTEM SPECIFICATIONS

| Property | Conditions | Method | Resin MC 4260 | Hardener W 4260 | UM |
|------------------------------------|------------|------------------------|------------------|--------------------|------|
| Viscosity at: | 50°C | IO-10-50 (ISO3219) | 2.500÷5.500 | - | mPas |
| Density at: | 25°C | IO-10-51 (ASTM D 1475) | 1,80÷1,85 | - | g/ml |
| FTIR spectrum (correlation factor) | | IO-10-75 | - | 0,990÷1,000 | |
| Gelation time | 80°C 100ml | IO-10-52b | - | 15÷25 | min |

TYPICAL SYSTEM CHARACTERISTICS

| Property | Conditions | Method | Value | UM |
|--------------------------------------|-----------------|------------------------|-------------------------------------|------|
| Mixing ratio by weight | | for 100 g resin | 100:10 | g |
| Mixing ratio by volume | | for 100 ml resin | 100:18 | ml |
| Resin Colour | | | Black | |
| Hardener Colour | | | Neutral | |
| Viscosity resin | 25°C | IO-10-50 (ISO3219) | 15.000÷25.000 | mPas |
| Viscosity hardener | 25°C | IO-10-50 (ISO3219) | 5÷15 | mPas |
| Density hardener | 25°C | IO-10-51 (ASTM D 1475) | 0,94÷0,98 | g/ml |
| Initial mixture viscosity at: | 25°C | IO-10-50 (ISO3219) | 3.000÷4.000 | mPas |
| | 50°C | IO-10-50 (ISO3219) | 400÷700 | mPas |
| Pot life (doubled initial viscosity) | 50°C | IO-10-50 (ISO3219) (*) | 15÷25 | min |
| | 80°C | IO-10-50 (ISO3219) (*) | 10÷15 | min |
| Gelation time | 25°C (15ml;6mm) | IO-10-73 (*) | 5÷6 | h |
| Gelation time | 60°C 100ml | IO-10-52b | 50÷60 | min |
| Suggested curing cycles | | (**) | 48 hours at 25°C or 6 hours at 80°C | |

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) | 1,73÷1,77 | g/ml |
| Hardness | 25°C | IO-10-58 (ASTM D 2240) | 85÷90 | Shore D/15 |
| Glass transition (Tg) | | IO-10-69 (ASTM D 3418) | 55÷65 | °C |
| Linear thermal expansion (Tg -10°C) | | IO-10-71 (ASTM E 831) | 60÷70 | 10 ⁻⁶ /°C |
| Linear thermal expansion (Tg +10°C) | | IO-10-71 (ASTM E 831) | 135÷155 | 10 ⁻⁶ /°C |
| Thermal shock (n°10 cycles passed) | | IO-10-67 (Olyphant metal insert) | -55÷+180 | °C |
| Flammability | | IO-10-68 (UL 94 HB) | 6 | mm |
| Max recommended operating temperature | | IEC 60085 (***) | 180 | °C |
| Thermal conductivity | | IO-10-87 (ASTM C518) | 0,60÷0,70 | W/(m°K) |
| Dielectric constant at: | 25°C | IO-10-59 (ASTM D 150) | 3,5÷4,5 | |
| Loss factor at: | 25°C | IO-10-59 (ASTM D 150) | 10÷30 | x 10 ⁻³ |
| Volume resistivity at: | 25°C | IO-10-60 (ASTM D 257) | 8 x 10 ¹⁴ ÷3 x 10 ¹⁵ | Ohm x cm |
| Dielectric strength | 25°C | IO-10-61 (ASTM D 149) | 19÷21 | kV/mm |
| Tracking index | | IEC 60112 | > 600 | CTI |
| Flexural strength | | IO-10-66 (ASTM D 790) | 75÷85 | MN/m² |
| Strain at break | | IO-10-66 (ASTM D 790) | 1,5÷2,5 | % |
| Flexural elastic modulus | | IO-10-66 (ASTM D 790) | 4.500÷5.500 | MN/m² |
| Tensile strength | | IO-10-63 (ASTM D 638) | 40÷50 | MN/m² |
| Elongation at break | | IO-10-63 (ASTM D 638) | 1,5÷3,0 | % |

ELANTAS EUROPE Sales offices:

Strada Antolini n°1 loc. Lemignano
43044 Collecchio (PR)
Italy
Tel +39 0521 304777
Fax +39 0521 804410

Grossmannstr. 105
20539 Hamburg
Germany
Tel +49 40 78946 0
Fax +49 40 78946 349

info.elantas.europe@altana.com
www.elantas.com

Legenda:

IO-00-00 = Elantas Europe'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 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.

Manufactured: ELANTAS Europe S.r.l. Sito di Strada Antolini n° 1, 43044 Collecchio (PR), Italy
www.elantas.com