

### **DELO-MONOPOX® GE790**

Heat curing Glob-Top

#### **Base**

- epoxy casting resin
- one-component, heat-curing, filled

#### **Curing**

- curing proceeds at a temperature of +150 °C in 40 min plus heating time of the components
- the heating time depends on the component size and the oven type
- increased temperatures shorten the curing process, lower temperatures extend it, and can change the properties of the cured product
- the minimal curing temperature is +140 °C
- the maximal curing temperature is +180 °C
- the actual curing times at the respective temperatures are dependent on the heating time of the components, the heating time of the components must be added to the curing time of the adhesive

#### **Use**

- for the casting of wire-bonded ICs
- the product is normally used in a temperature range of -40 °C to +150 °C; depending on the application, other limits may be more reasonable

#### **Processing**

- the adhesive is supplied ready for use; in case of cool or refrigerated storage, it must be ensured that the container is conditioned to room temperature before use
- the containers are conditioned at room temperature (max. 25 °C); the conditioning time is approx. 0.5 h for containers up to 10 ml and approx. 2 h for containers up to 310 ml; additional heat addition is not allowed
- the adhesive can be optimally processed within the processing time (storage life at room temperature)
- the adhesive is normally applied by dispensing
- the surfaces to be bonded must be dry as well as free of dust, grease and other contaminations
- dispensing valves and product-bearing elements must be carefully cleaned directly after adhesive use; acetone is recommended as cleaner

#### **Technical data**

Color cured	black
Filler content [weight %]	69
Filler particle size [ $\mu\text{m}$ ] d 90	$\leq 40$

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<b>Density [g/cm<sup>3</sup>]</b> at room temperature (approx. 23 °C)	1.8
<b>Viscosity [mPas]</b> at 23 °C, rheometer	160000
<b>Processing time</b> at room temperature (approx. 23 °C)	10 hours
<b>Curing time until final strength [min]</b> rheometer at +150 °C	40
<b>Tensile shear strength Al/Al [MPa]</b> DIN EN 1465 component thickness: 1.6 mm after 40 min at +150 °C	8
<b>Compression shear strength FR4/FR4 [MPa]</b> DELO Standard 5 curing: 40 min at +150 °C	4
<b>Tensile strength [MPa]</b> DIN EN ISO 527, after 40 min at +150 °C	30
<b>Elongation at tear [%]</b> DIN EN ISO 527, after 40 min at +150 °C	0.3
<b>Young's modulus [MPa]</b> DIN EN ISO 527, after 40 min at +150 °C	13000
<b>Shore hardness D</b> DIN 53505, after 40 min at +150 °C	92
<b>Glass transition temperature [°C]</b> TMA	175
<b>Coefficient of linear expansion [ppm/K]</b> TMA, in a temperature range of +30 to +150 °C	17
<b>Shrinkage [vol. %]</b> DIN 16945, after 40 min at +150 °C	0.5
<b>Water absorption [weight %]</b> DIN EN ISO 62, after 40 min at +150 °C	0.15
<b>Ion content Cl- [ppm]</b> extraction	< 10
<b>Ion content K+ [ppm]</b> extraction	< 10
<b>Ion content Na+ [ppm]</b> extraction	< 10
<b>Specific volume resistance [Ωcm]</b> VDE 0303, part 3 specimen: diameter 120 mm, thickness 2 mm	> 1xE13
<b>Surface resistance [Ω]</b> VDE 0303, part 3 specimen: diameter 120 mm, thickness 2 mm	> 1xE13
<b>Dielectric constant</b> RF-IV method, 1 MHz, at 25 °C +/- 3 °C	3.5
<b>Dielectric constant</b> RF-IV method, 10 MHz, at 25 °C +/- 3 °C	3.5

Dielectric constant RF-IV method, 100 MHz, at 25 °C +/- 3 °C	3.5
Dielectric constant RF-IV method, 1 GHz, at 25 °C +/- 3 °C	3.4
Creep resistance CTI VDE 0303, part 1, IEC 112	600 M
Storage life at -20 °C in unopened original container	4 months
<b>Performance under chemical influence</b> compression shear strength after storage for 1,000 h based on initial value at room temperature measured at room temperature (approx. 23 °C) according to DELO Standard 5	

Chemical medium	Compression/shear strength A1/A1 [%]
acetone	71
ethanol denatured	79
ethanol 70 % denatured	99
ATF gear oil	90
petrol	107
diesel fuel	98
engine oil 10W40	106
acetic acid 10 %	85
demineralised water / glykol mixture 50:50	83
demineralised water	54

## **Instructions and advice**

### **General**

The data and information provided are based on tests performed under laboratory conditions. Reliable information about the behavior of the product under practical conditions and its suitability for a specific purpose cannot be concluded from this.

Many product properties are subject to temperature and may change permanently, especially at high temperatures.

It is the user's responsibility to test the suitability of the product for the intended purpose and temperature range of use by considering all specific requirements. Type and physical and chemical properties of the materials to be processed with the product, as well as all actual influences occurring during transport, storage, processing and use, may cause deviations in the behavior of the product compared to its behavior under laboratory conditions. All data provided are typical average values or uniquely determined parameters measured under laboratory conditions.

The data and information provided are, therefore, no guarantee for specific product properties or the suitability of the product for a specific purpose.

### **Instructions for use**

The instructions for use of DELO-MONOPOX are available on: [www.DELO.de](http://www.DELO.de). We will be pleased to send them to you on demand.

### **Occupational health and safety**

see material safety data sheet

### **Specification**

see quality assurance test report