DELO® MONOPOX GE765

modified epoxy resin | 1C | heat-curing
free of solvents | filled, thixotropic | low CTE

Special features of product
- compliant with RoHS Directive 2015/863/EU
- reliable according to JEDEC MSL 1 (referring to IPC/JEDEC J-STD-020D.1)
- passes ANSI/UL 94 HB Flame Test

Function
- electronic encapsulant
- glob top

Typical area of use
- -65 - 180 °C
- encapsulation of chip modules

Curing

Typical curing time

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>+150 °C</td>
<td>20 min</td>
</tr>
<tr>
<td>+120 °C</td>
<td>90 min</td>
</tr>
</tbody>
</table>

Processing

Conditioning time (typical)

<table>
<thead>
<tr>
<th>Storage Conditions</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 10 ml</td>
<td>0.5 h</td>
</tr>
<tr>
<td>up to 50 ml</td>
<td>1 h</td>
</tr>
<tr>
<td>up to 170 ml</td>
<td>2 h</td>
</tr>
<tr>
<td>up to 310 ml</td>
<td>3 h</td>
</tr>
</tbody>
</table>

Processing time

<table>
<thead>
<tr>
<th>Environment</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>+23 °C / 50 % r. h.</td>
<td>48 h</td>
</tr>
</tbody>
</table>
Storage life in unopened original container

at -18 °C 6 month(s)

Technical properties

Color in cured condition in 1 mm layer thickness black

Transparency in cured condition in 1 mm layer thickness opaque

Filler particle type minerals

Filler particle size d95 = 65 µm

Parameters

Density

DELO Standard 13 | Liquid

1.7 g/cm³

Viscosity

Liquid | Rheometer | Shear rate: 10 1/s | Gap: 100 µm

26000 mPa·s

Compression shear strength

DELO Standard 5 | PA6 | PA6 | Pretreatment: Annealing | 150 °C | 20 min

14 MPa

DELO Standard 5 | Al | Al | 150 °C | 20 min

20 MPa

DELO Standard 5 | FR4 | FR4 | Pretreatment: Annealing | 150 °C | 20 min

50 MPa

DELO Standard 5 | LCP T130 | LCP T130 | 150 °C | 20 min

14 MPa

DELO Standard 5 | PBT | PBT | 150 °C | 20 min

20 MPa

DELO Standard 5 | PPS | PPS | 150 °C | 20 min

33 MPa

Tensile strength

Based on DIN EN ISO 527 | 150 °C | 20 min

60 MPa

Elongation at tear

Based on DIN EN ISO 527 | 150 °C | 20 min

0.7 %
**Young's modulus**  
Based on DIN EN ISO 527 | 150 °C | 20 min  
9000 MPa

**Shore hardness D**  
Based on DIN EN ISO 868 | 150 °C | 20 min  
86

**Glass transition temperature**  
DELO Standard 26 | TMA | 150 °C | 20 min  
186 °C

**Coefficient of linear expansion**  
DELO Standard 26 | TMA | Evaluation T: 29 °C - 162 °C | 150 °C | 20 min  
29 ppm/K

**Water absorption**  
Based on DIN EN ISO 62 | 150 °C | 20 min | Type of storage: Media | Medium: Distilled water | Duration: 24 h  
0.13 wt. %

**Extractable chloride ions**  
150 °C | 20 min  
<10 ppm

**Extractable potassium ions**  
150 °C | 20 min  
<10 ppm

**Extractable sodium ions**  
150 °C | 20 min  
<10 ppm

**Creep resistance CTI**  
Based on DIN EN 60112 | 150 °C | 20 min  
600

**Converting table**

<table>
<thead>
<tr>
<th>Conversion</th>
<th>Unit</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>°F to °C</td>
<td>°C</td>
<td>(°C x 1.8) + 32</td>
</tr>
<tr>
<td>1 inch</td>
<td>mm</td>
<td>25.4</td>
</tr>
<tr>
<td>1 mil</td>
<td>µm</td>
<td>25.4</td>
</tr>
<tr>
<td>1 oz</td>
<td>g</td>
<td>28.3495</td>
</tr>
<tr>
<td>1 MPa</td>
<td>psi</td>
<td>145.04</td>
</tr>
<tr>
<td>1 GPa</td>
<td>ksi</td>
<td>145.04</td>
</tr>
<tr>
<td>1 cP</td>
<td>mPa s</td>
<td>1</td>
</tr>
<tr>
<td>1 N</td>
<td>lb</td>
<td>0.225</td>
</tr>
</tbody>
</table>

**General curing and processing information**

The curing time stated in the technical data was determined in the laboratory. It can vary depending on the adhesive quantity and component geometry and is therefore a reference value. The heating time of the components must be added to the actual curing time. It depends on component size and type of heat input. The specified curing temperature must be reached directly at the adhesive. Increasing or decreasing the curing temperature and / or irradiation intensity and / or irradiation time shortens or prolongs the curing time and can lead to changed physical properties. Depending on the adhesive quantity used, exothermic reaction heat is generated which can lead to overheating. In this case, a lower curing temperature is to be selected. Values measured after 24 h at approx. 23 °C / 50 % r.h., unless otherwise specified.
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. It is the customer’s responsibility to test the suitability of a product for the intended purpose by considering all specific requirements and by applying standards the customer deems suitable (e.g. DIN 2304-1). Type, 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.

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Instructions for use

You can find further details in the instructions for use.

The instructions for use are available on www.DELO-adhesives.com.

We will be pleased to send them to you on demand.

Occupational health and safety

See material safety data sheet.

Specification

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