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

Recommended curing time

\[
\begin{array}{ll}
\text{at } +150 ^\circ C & 20 \text{ min} \\
\text{in air convection oven} & \\
\text{at } +120 ^\circ C & 90 \text{ min} \\
\text{in air convection oven} & \\
\end{array}
\]

Processing

Conditioning time (typical)

\[
\begin{array}{ll}
\text{stored at } -18 ^\circ C & 0.5 \text{ h} \\
\text{in containers up to 10 ml} & \\
\text{stored at } -18 ^\circ C & 1 \text{ h} \\
\text{in containers up to 50 ml} & \\
\text{stored at } -18 ^\circ C & 2 \text{ h} \\
\text{in containers up to 170 ml} & \\
\text{stored at } -18 ^\circ C & 3 \text{ h} \\
\text{in containers up to 310 ml} & \\
\end{array}
\]

Processing time

\[
\text{in standard climate } +23 ^\circ C / 50 \% \text{ r. h.} \quad 48 \text{ h}
\]
## Storage life in unopened original container

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>-18 °C</td>
<td>6 month(s)</td>
</tr>
</tbody>
</table>

### Technical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color in cured condition in 1 mm layer thickness</td>
<td>black</td>
</tr>
<tr>
<td>Transparency in cured condition in 1 mm layer thickness</td>
<td>opaque</td>
</tr>
<tr>
<td>Filler particle type</td>
<td>minerals</td>
</tr>
<tr>
<td>Filler particle size</td>
<td>d95 = 65 µm</td>
</tr>
</tbody>
</table>

### Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density, DELO Standard 13</td>
<td>Liquid</td>
</tr>
<tr>
<td>Viscosity, Liquid</td>
<td>Rheometer</td>
</tr>
<tr>
<td>Compression shear strength, DELO Standard 5</td>
<td>PBT</td>
</tr>
<tr>
<td>Compression shear strength, DELO Standard 5</td>
<td>Al</td>
</tr>
<tr>
<td>Compression shear strength, DELO Standard 5</td>
<td>FR4</td>
</tr>
<tr>
<td>Compression shear strength, DELO Standard 5</td>
<td>LCP T130</td>
</tr>
<tr>
<td>Compression shear strength, DELO Standard 5</td>
<td>PA6</td>
</tr>
<tr>
<td>Compression shear strength, DELO Standard 5</td>
<td>PPS</td>
</tr>
<tr>
<td>Tensile strength, Based on DIN EN ISO 527</td>
<td>150 °C</td>
</tr>
</tbody>
</table>
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

Converting table
°F = (°C x 1.8) + 32
1 MPa = 145.04 psi
1 inch = 25.4 mm
1 GPa = 145.04 ksi
1 mil = 25.4 μm
1 cP = 1 mPa·s
1 oz = 28.3495 g
1 N = 0.225 lb

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 oven type. The specified curing temperature must be reached directly at the adhesive.
Increasing or decreasing the curing temperature and / or irradiation intensity and / or irradiation intensity 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). The 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

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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