DELO® MONOPOX DA587

modified epoxy resin | 1C | heat-curing
free of solvents | thixotropic

Special features of product
- compliant with RoHS Directive 2015/863/EU
- halogen-free according to IEC 61249-2-21

Function
- die attach adhesive

Typical area of use
- -40 - 150 °C
- smart card applications
- bonding of bare semiconductors
- chip bonding

Curing

Typical curing time

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Cure Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>+130 °C</td>
<td>5 min</td>
</tr>
<tr>
<td>+150 °C</td>
<td>2 min</td>
</tr>
</tbody>
</table>

Processing

Conditioning time (typical)

<table>
<thead>
<tr>
<th>Storage Conditions</th>
<th>Conditioning 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>
</tbody>
</table>

Processing time

in standard climate +23 °C / 50 % r. h.
- 5 d

Storage life in unopened original container

at -45 °C to -15 °C
- 6 month(s)
**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>white</td>
</tr>
<tr>
<td>Transparency in cured condition in 1 mm layer thickness</td>
<td>opaque</td>
</tr>
</tbody>
</table>

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>DELO Standard 13</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Liquid</td>
</tr>
<tr>
<td>Thixotropy index</td>
<td>Liquid</td>
</tr>
<tr>
<td>Die shear strength</td>
<td>DELO Standard 30</td>
</tr>
<tr>
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<td>Die shear strength</td>
<td>DELO Standard 30</td>
</tr>
<tr>
<td>Tensile strength</td>
<td>Based on DIN EN ISO 527</td>
</tr>
<tr>
<td>Elongation at tear</td>
<td>Based on DIN EN ISO 527</td>
</tr>
<tr>
<td>Young’s modulus</td>
<td>Based on DIN EN ISO 527</td>
</tr>
<tr>
<td>Shore hardness D</td>
<td>Based on DIN EN ISO 868</td>
</tr>
<tr>
<td>Glass transition temperature</td>
<td>DELO Standard 26</td>
</tr>
</tbody>
</table>
Co-efficient of linear expansion
DELO Standard 26 / TMA / Evaluation T: 30 °C - 60 °C
94 ppm/K

Co-efficient of linear expansion
DELO Standard 26 / TMA / Evaluation T: 80 °C - 180 °C
168 ppm/K

Shrinkage
DELO Standard 13
3.8 vol. %

Water absorption
Based on DIN EN ISO 62
0.5 wt. %

Decomposition temperature
DELO Standard 36
284 °C

Extractable fluoride ions
<100 ppm

Extractable chloride ions
<10 ppm

Extractable potassium ions
<10 ppm

Extractable sodium ions
<20 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 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. Nothing contained herein shall be construed to indicate the non-existence of any relevant patents or to constitute a permission, encouragement or recommendation to practice any development covered by any patents, without permission of the owner of this patent. All products provided by DELO are subject to DELO’s General Terms of Business. Verbal ancillary agreements are deemed not to exist.

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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