# DELO® MONOPOX AC2457

**modified epoxy resin | 1C | heat-curing**

free of solvents | anisotropic electrically conductive, humidity-resistant, filled, 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
- bonding and electrical contacting of bare semiconductors in flip-chip technology

## Curing

| | | |
|---|---|---|
| Typical curing time | | |
| *at +180 °C*<br>*with thermode* | 8 | s |

## Processing

| | | |
|---|---|---|
| Typical adhesive application | jetting | |
| Conditioning time (typical) | | |
| *when stored in cold conditions*<br>*in containers up to 10 ml* | 0.5 | h |
| Processing time | | |
| *in standard climate +23 °C / 50 % r. h.*<br>*in containers up to 10 ml* | 7 | d |
| Storage life in unopened original container | | |
| *at -25 °C to -15 °C* | 6 | month(s) |

## Technical properties

| | |
|---|---|
| Color in cured condition in 1 mm layer thickness | gray |
| Transparency in cured condition in 1 mm layer thickness | opaque |

| | | |
|---|---|---|
| Filler particle type | nickel core | |
| Filler particle size | d50 = 5 µm | |

## Parameters

| | | |
|---|---|---|
| Density<br>*by the criteria of DIN 66137-2 \| liquid* | 1.48 | g/cm³ |
| Viscosity<br>*liquid \| Rheometer \| Shear rate: 10 1/s \| Gap: 500 µm* | 55000 | mPa·s |
| Young's modulus<br>*DMTA \| 140 °C \| 20 min* | 2400 | MPa |
| Shore hardness D<br>*by the criteria of DIN EN ISO 868 \| 140 °C \| 20 min* | 83 | |
| Glass transition temperature<br>*DMTA \| 140 °C \| 20 min* | 149 | °C |
| Coefficient of linear expansion<br>*DELO Standard 26 \| TMA \| Evaluation T: -40 °C - 60 °C \| 140 °C \| 20 min* | 52 | ppm/K |
| Coefficient of linear expansion<br>*DELO Standard 26 \| TMA \| Evaluation T: 140 °C - 180 °C \| 140 °C \| 20 min* | 179 | ppm/K |
| Shrinkage<br>*140 °C \| 20 min* | 1.5 | vol. % |
| Water absorption<br>*by the criteria of DIN EN ISO 62 \| Layer thickness: 4 mm \| 140 °C \| 20 min \| Type of storage: Media \| Medium: Distilled water \| Storage temperature: at approx. +23 °C* | 0.27 | wt. % |
| Extractable ions<br>*Ion: Chloride* | <10 | ppm |
| Extractable ions<br>*Ion: Fluoride* | <10 | ppm |
| Extractable ions<br>*Ion: Potassium* | <10 | ppm |
| Extractable ions<br>*Ion: Sodium* | <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 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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