

### **DELO-MONOPOX® AC265**

Anisotropic conductive, heat-curing adhesive to contact flip chip (e. g. with Ni/Au- and galvanic Au-bumps)

#### **Base**

- modified epoxy resin
- one-part, heat curing, solvent-free, not filled

#### **Use**

- especially suitable for smart label and smart card
- fast curing at moderate temperatures (+150 to +210 °C at the adhesive)
- high reliability at the test +85 °C / 85 % relative humidity by the low water absorption
- very good adhesion on PET, FR 4, copper, aluminium and silver

#### **Processing**

- for bonding and electrical contacting of uncased semiconductors (ICs) in the Flip-Chip technology
- the adhesive is ready-for-use on delivery, processing time at room temperature is 2 weeks
- the adhesive will be applied through dispensing or stencil printing
- the process steps for the adhesive application are as follows:
  1. Application of adhesive to the substrate. It must be ensured that the adhesive layer has no bubbles.
  2. Placing the semiconductor into the adhesive.
  3. At a temperature of +150 to +210 °C at the adhesive, press the semiconductor with a thermode and a defined pressure.
  4. By specifically high demands, a post-curing of 2 min at +140 °C is recommended.
- the surface areas which are to be bonded must be dry, free of dust and grease as well as of other contaminants

#### **Curing**

- the curing process needs e. g. 6 to 19 seconds at +150 to +210 °C at the adhesive using a thermode
- higher temperatures decrease, lower temperatures prolong the curing process and may possibly change the properties of the cured product
- the minimum curing temperature is +120 °C
- the actual curing times at respective temperatures are dependent on the time it takes to heat-up the join parts, the heating time of the components must be added to the curing time of the adhesive
- for curing times at recommended temperatures, see the technical data

#### **Technical data**

Color  
cured

greyish-brownish

particle type and surface

NiAu-particles

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particle size [ $\mu\text{m}$ ]	approx. 2.5
Density [ $\text{g}/\text{cm}^3$ ] standard DELO 13 at room temperature (approx. 23 °C)	1.3
Viscosity [ $\text{mPas}$ ] at 23 °C, rheometer, shear rate 10 1/s	26000
pressing time [s] at 190 °C adhesive temperature	6
Tensile strength [ $\text{MPa}$ ] DIN EN ISO 527	50
Elongation at tear [%] DIN EN ISO 527	1.7
Young's modulus [ $\text{MPa}$ ] DIN EN ISO 527	3300
Glass transition temperature [ $^{\circ}\text{C}$ ] rheometer	135
Coefficient of linear expansion [ $\text{ppm}/\text{K}$ ] TMA, in a temperature range of +30 to +100 °C	61
Coefficient of linear expansion [ $\text{ppm}/\text{K}$ ] TMA, in a temperature range of +130 to +160 °C	180
Water absorption [weight %] corresponding to DIN EN ISO 62, 24 h at room temperature (approx. 23 °C)	0.4
ion content $\text{Na}^+$ [ppm] extraction	< 10
ion content $\text{K}^+$ [ppm] extraction	< 10
ion content $\text{Cl}^-$ [ppm] extraction	< 10
ion content $\text{F}^-$ [ppm] extraction	< 10
Storage life at room temperature (approx. 23 °C) in unopened original container	2 weeks
storage life at $\leq +8$ °C in unopened original container	6 months

## **Instructions and advice**

### **General**

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

It is the user's responsibility to test the suitability of the product for the intended purpose 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 behaviour of the product compared to its behaviour 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 instruction for use is available under following address: [www.DELO.de](http://www.DELO.de). If requested we will also be pleased to send it to you.

### **Occupational health and safety**

see material safety data sheet

### **Specification**

see quality assurance test report