DELO DUALBOND® BS3770

modified polycarbamin acid derivate | 1C | light-fixable / heat-curing

free of solvents | thixotropic | light-fixable, heat curing mandatory, tension-equalizing

Special features of product

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

Function

- B stage adhesive
- die attach adhesive
- electronic adhesive

Typical area of use

- -40 - 150 °C

Curing

Suitable lamp types	LED 365 nm, LED 400 nm	
Typical irradiation time *intensity 200 mW/cm²* *LED 400 nm* *A stage to B stage*	10	s
Typical curing time *at +150 °C* *in air convection oven* *B stage to C stage*	40	min

Processing

Typical adhesive application	needle dispensing, stencil printing, screen printing	
Conditioning time (typical) *when stored in cold conditions* *in containers up to 10 ml*	0.5	h
Processing time A stage *in standard climate +23 °C / 50 % r. h.* *in containers up to 10 ml*	3	d

Processing time B stage		
in standard climate +23 °C / 50 % r. h.	21	d
Storage life in unopened original container		
at -18 °C	6	month(s)

Technical properties

Color in uncured condition	beige	
Color in cured condition in 1 mm layer thickness	beige	
Transparency in cured condition in 1 mm layer thickness	opaque	

Parameters

Density *DELO Standard 13 | 150 °C | 40 min*	1	g/cm³
Viscosity *liquid | Rheometer | Shear rate: 10 1/s | Gap: 500 µm*	115000	mPa·s
Thixotropy index *liquid | Rheometer | Gap: 500 µm*	3.2	
Die shear strength *DELO Standard 30 | **Si** | Chip 2 mm x 2 mm | **Ag** | 150 °C | 40 min*	18	N
Die shear strength *DELO Standard 30 | **Si** | Chip 2 mm x 2 mm | **Solder resist** | 50 mm x 25 mm | Pretreatment: Annealing | 400 nm | 200 mW/cm² | 10 s | Plus | 150 °C | 40 min*	15	N
Die shear strength *DELO Standard 30 | **Si** | Chip 2 mm x 2 mm | **Solder resist** | 50 mm x 25 mm | Pretreatment: Annealing | 150 °C | 40 min*	18	N
Tensile strength *by the criteria of DIN EN ISO 527 | 150 °C | 40 min*	2	MPa
Elongation at tear *by the criteria of DIN EN ISO 527 | 150 °C | 40 min*	200	%
Young's modulus *Rheometer | 400 nm | 200 mW/cm² | 10 s | Plus | 150 °C | 40 min*	2	MPa

Young's modulus *DELO Standard 54 | Rheometer | 150 °C | 40 min*	5	MPa
Shore hardness A *by the criteria of DIN EN ISO 868 | 150 °C | 40 min*	37	
Glass transition temperature *DELO Standard 54 | Rheometer | 150 °C | 40 min*	-57	°C
Coefficient of linear expansion *DELO Standard 26 | TMA | Evaluation T: -97 °C - -91 °C | 150 °C | 40 min*	83	ppm/K
Coefficient of linear expansion *DELO Standard 26 | TMA | Evaluation T: 31 °C - 42 °C | 150 °C | 40 min*	253	ppm/K
Shrinkage *150 °C | 40 min*	0.38	vol. %

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.Only a small part of the bonding should be light-fixed as the maximum build-up of adhesion is achieved by pure heat curing.The adhesive shows postcuring behavior. After heat curing at low temperatures and a short curing time, a certain level of strength is already achieved. The adhesive postcures at room temperature and achieves a level of strength corresponding to the curing temperature after approx. 24 hours.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.All curing or light fixation parameters depend on material thickness and absorption, adhesive layer thickness, lamp type and distance between lamp and adhesive layer.Optional prefixation is performed with light. Heat curing is mandatory.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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