

DELO DUALBOND® OB749

modified epoxy resin | 1C | UV- / VIS- / heat-curing

free of solvents | low outgassing, filled, low swelling, can be fixed quickly, thixotropic | dual-curing, light-fixable, low CTE, low-temperature-curing

Special features of product

- compliant with RoHS Directive 2015/863/EU
- halogen-free according to IEC 61249-2-21
- low-outgassing according to ASTM E 595-93 (also known as NASA outgassing test)

Function

- electronic adhesive

Typical area of use

- -40 - 180 °C
- active alignment for camera modules
- glass/metal bondings
- mixed bondings with plastics
- fast component fixation
- bonding of temperature-sensitive substrates
- bonding of opaque components

Curing

Suitable lamp types	LED 365 nm, LED 400 nm, UVA
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Typical light fixation time

<i>intensity 1000 mW/cm² LED 400 nm</i>	2 - 6	s
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Typical curing time

<i>at +80 °C in air convection oven</i>	60	min
<i>at +100 °C in air convection oven</i>	30	min
<i>at +130 °C in air convection oven</i>	15	min
<i>at +150 °C in air convection oven</i>	10	min

Processing

Typical adhesive application	needle dispensing	
Conditioning time (typical)		
<i>when stored in cold conditions in containers up to 50 ml</i>	1	h
<i>when stored in cold conditions in containers up to 310 ml</i>	3	h
Processing time		
<i>at rt approx. +23 °C</i>	120	h
Storage life in unopened original container		
<i>at -45 °C to -15 °C</i>	6	month(s)

Technical properties

Transparency	translucent	
Color in cured condition in 0.1 mm layer thickness	whitish	
Transparency in cured condition in 0.1 mm layer thickness	translucent	
Filler particle type	minerals	
Filler particle size	d98 = 8 µm	
Filler content	50	wt. %

Parameters

Density <i>DELO Standard 13 liquid</i>	1.48	g/cm ³
Viscosity <i>liquid Viscosimeter</i>	14000	mPa·s
Maximum curable layer thickness <i>DELO Standard 20 white substrate 400 nm 200 mW/cm² 60 s Plus at approx. +23 °C 24 h</i>	0.6	mm

Compression shear strength 20 MPa
DELO Standard 5 | Glass | Glass | 400 nm | 200 mW/cm² | 20 s | Plus | at approx. +23 °C | 24 h

Tensile strength 52 MPa
Based on DIN EN ISO 527 | 400 nm | 200 mW/cm² | 20 s | Plus | 130 °C | 15 min

Elongation at tear 0.9 %
Based on DIN EN ISO 527 | 400 nm | 200 mW/cm² | 20 s | Plus | 130 °C | 15 min

Young's modulus 6500 MPa
DMTA | 400 nm | 200 mW/cm² | 20 s | Plus | 130 °C | 15 min

Young's modulus 6200 MPa
Based on DIN EN ISO 527 | 400 nm | 200 mW/cm² | 20 s | Plus | 130 °C | 15 min

Shore hardness D >90
Based on DIN EN ISO 868 | 400 nm | 200 mW/cm² | 20 s | Plus | 130 °C | 15 min

Glass transition temperature 182 °C
DMTA | 400 nm | 200 mW/cm² | 20 s | Plus | 130 °C | 15 min

Coefficient of linear expansion 44 ppm/K
DELO Standard 26 | TMA | Evaluation T: 30 °C - 70 °C | 400 nm | 200 mW/cm² | 20 s | Plus | 130 °C | 15 min

Coefficient of linear expansion 93 ppm/K
DELO Standard 26 | TMA | Evaluation T: 130 °C - 170 °C | 400 nm | 200 mW/cm² | 20 s | Plus | 130 °C | 15 min

Shrinkage 2.6 vol. %
DELO Standard 13 | 400 nm | 200 mW/cm² | 20 s | Plus | 130 °C | 15 min

Water absorption 0.11 wt. %
Based on DIN EN ISO 62 | 400 nm | 200 mW/cm² | 20 s | Plus | 130 °C | 15 min | Type of storage: Media | Medium: Distilled water | Duration: 24 h

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.

Parameters can vary for pure light curing, pure heat curing and a combination of light and heat curing.

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.

Curing until final strength proceeds within 24 hours at room temperature.

Light and heat curing mechanisms can be used independently.

High temperatures during or after curing can lead to post-crosslinking of the adhesive which influences the physical properties of the bond.

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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