

DELO DUALBOND® OB786

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

free of solvents | low outgassing, filled, low swelling, reproducible, low shrinkage, can be fixed quickly | dual-curing, humidity-resistant, 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
- compliant with limits of VOC content in adhesive acc. to GB33372-2020

Function

- electronic adhesive

Typical area of use

- -40 - 180 °C
- active alignment for camera modules
- fast component fixation

Curing

Suitable lamp types LED 365 nm, UVA

Typical light fixation time

*intensity 150 mW/cm²
LED 365 nm* 4 s

Typical curing time

*at +80 °C
in air convection oven* 50 min

*at +100 °C
in air convection oven* 25 min

*at +130 °C
in air convection oven* 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 170 ml</i>	2	h

Processing time

<i>in standard climate +23 °C / 50 % r. h.</i>	72	h
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Storage life in unopened original container

<i>at -45 °C to -15 °C</i>	6	month(s)
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Technical properties

Color in cured condition in 0.1 mm layer thickness	yellow	
Transparency in cured condition in 0.1 mm layer thickness	translucent	
Color in cured condition in 1 mm layer thickness	yellow	
Transparency in cured condition in 1 mm layer thickness	translucent	
Filler particle type	minerals	
Filler particle size	d95 = 12 µm	
Filler content	55	wt. %

Parameters

Density <i>DELO Standard 13 liquid</i>	1.6	g/cm ³
Viscosity <i>liquid Rheometer Shear rate: 10 1/s Gap: 500 µm</i>	32000	mPa·s
Thixotropy index <i>liquid Rheometer Gap: 500 µm</i>	7	
Maximum curable layer thickness <i>DELO Standard 20 365 nm 150 mW/cm² 60 s</i>	0.76	mm
Compression shear strength <i>DELO Standard 5 Al, anodized Al, anodized 130 °C 5 min Plus at approx. +23 °C 24 h</i>	41	MPa

Compression shear strength 27 MPa
 DELO Standard 5 | **FR4** | **FR4** | 130 °C | 5 min | Plus | at approx. +23 °C | 24 h

Compression shear strength 20 MPa
 DELO Standard 5 | **Glass** | **Glass** | 365 nm | 150 mW/cm² | 10 s | Plus | at approx. +23 °C | 24 h

Compression shear strength 33 MPa
 DELO Standard 5 | **PPS** | **PPS** | 130 °C | 5 min | Plus | at approx. +23 °C | 24 h

Tensile strength 41 MPa
 Based on DIN EN ISO 527 | 365 mm | 150 mW/cm² | 60 s | Plus | 130 °C | 5 min | Plus | at approx. +23 °C | 24 h

Elongation at tear 0.8 %
 Based on DIN EN ISO 527 | 365 nm | 150 mW/cm² | 60 s | Plus | 130 °C | 5 min | Plus | at approx. +23 °C | 24 h

Young's modulus 7500 MPa
 DMTA | 365 nm | 150 mW/cm² | 60 s | Plus | 130 °C | 5 min | Plus | at approx. +23 °C | 24 h

Shore hardness D >90
 Based on DIN EN ISO 868 | 365 nm | 150 mW/cm² | 60 s | Plus | 130 °C | 5 min | Plus | at approx. +23 °C | 24 h

Glass transition temperature 179 °C
 DMTA | 365 nm | 150 mW/cm² | 60 s | Plus | 130 °C | 5 min | Plus | at approx. +23 °C | 24 h

Coefficient of linear expansion 38 ppm/K
 DELO Standard 26 | TMA | Evaluation T: 30 °C - 80 °C | 365 nm | 150 mW/cm² | 60 s | Plus | 130 °C | 5 min | Plus | at approx. +23 °C | 24 h

Coefficient of linear expansion 53 ppm/K
 DELO Standard 26 | TMA | Evaluation T: 130 °C - 150 °C | 365 nm | 150 mW/cm² | 60 s | Plus | 130 °C | 5 min | Plus | at approx. +23 °C | 24 h

Shrinkage 1.6 vol. %
 DELO Standard 13 | unter Folieunter Glas | 365 nm | 150 mW/cm² | 60 s | Plus | 130 °C | 5 min | Plus | at approx. +23 °C | 24 h

Water absorption 0.08 wt. %
 Based on DIN EN ISO 62 | 365 nm | 150 mW/cm² | 60 s | Plus | 130 °C | 5 min | Plus | at approx. +23 °C | 24 h | Type of storage: Media | Medium: Distilled water | Storage temperature: at approx. +23 °C | 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. In Abhängigkeit der eingesetzten Klebstoffmenge entsteht exotherme Reaktionswärme, die zu Überhitzung führen kann. In diesem Fall ist eine niedrigere Aushärtungstemperatur zu wählen. 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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