

DELO DUALBOND® OB787

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, flow-resistant

Special features of product

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

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

Typical light fixation time

*intensity 1,000 mW/cm²
LED 365 nm* 2 - 6 s

Typical curing time

*at +80 °C
in air convection oven* 60 min

*at +100 °C
in air convection oven* 30 min

*at +130 °C
in air convection oven* 15 min

*at +150 °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 310 ml</i>	3	h

Processing time

<i>at rt approx. +23 °C</i>	120	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 uncured condition	whitish	
Transparency	opaque	
Color in cured condition in 0.1 mm layer thickness	yellowish	
Transparency in cured condition in 0.1 mm layer thickness	translucent	
Fluorescence	fluorescent	
Filler particle type	minerals	
Filler particle size	d98 = 8 µm	
Filler content	50	wt. %

Parameters

Density <i>liquid</i>	1.5	g/cm ³
Viscosity <i>liquid Rheometer Shear rate: 10 1/s Gap: 500 µm</i>	46800	mPa·s
Thixotropy index <i>liquid Rheometer Gap: 500 µm</i>	7.0	
Maximum curable layer thickness <i>DELO Standard 20 White substrate 365 nm 200 mW/cm² 60 s Plus at approx. +23 °C 24 h</i>	0.5	mm

Compression shear strength <i>DELO Standard 5 Al, Al 130 °C 15 min</i>	27	MPa
Compression shear strength <i>DELO Standard 5 Al, anodized Al, anodized 130 °C 15 min</i>	50	MPa
Compression shear strength <i>DELO Standard 5 FR4 FR4 130 °C 15 min</i>	11	MPa
Compression shear strength <i>DELO Standard 5 Glass Glass 365 nm 200 mW/cm² 15 s Plus at approx. +23 °C 24 h</i>	20	MPa
Compression shear strength <i>DELO Standard 5 Glass Glass 130 °C 15 min</i>	20	MPa
Compression shear strength <i>DELO Standard 5 LCP MR25 LCP MR25 130 °C 15 min</i>	3	MPa
Compression shear strength <i>DELO Standard 5 PC PC 130 °C 15 min</i>	42	MPa
Tensile strength <i>by the criteria of DIN EN ISO 527 365 nm 200 mW/cm² 15 s Plus 130 °C 15 min</i>	46	MPa
Elongation at tear <i>by the criteria of DIN EN ISO 527 365 nm 200 mW/cm² 15 s Plus 130 °C 15 min</i>	0.8	%
Young's modulus <i>DMTA 365 nm 200 mW/cm² 15 s Plus 130 °C 15 min</i>	7000	MPa
Shore hardness D <i>by the criteria of DIN EN ISO 868 365 nm 200 mW/cm² 15 s Plus 130 °C 15 min</i>	>90	
Glass transition temperature <i>DMTA 365 nm 200 mW/cm² 15 s Plus 130 °C 15 min</i>	185	°C
Coefficient of linear expansion <i>DELO Standard 26 TMA Evaluation T: 30 °C - 50 °C 365 nm 200 mW/cm² 15 s Plus 130 °C 15 min</i>	45	ppm/K
Coefficient of linear expansion <i>DELO Standard 26 TMA Evaluation T: 140 °C - 170 °C 365 nm 200 mW/cm² 15 s Plus 130 °C 15 min</i>	79	ppm/K
Shrinkage <i>DELO Standard 13 365 nm 200 mW/cm² 15 s Plus 130 °C 15 min</i>	1.5	vol. %

Water absorption 0.1 wt. %

by the criteria of DIN EN ISO 62 | Layer thickness: 4 mm | 365 nm | 200 mW/cm² | 15 s | Plus | 130 °C | 15 min | Type of storage: Media | Medium: Distilled water | Storage temperature: at approx. +23 °C | Duration: 24 h

Relative permittivity 3.2

by the criteria of DIN 53483-2 | 60 mW/cm² | 60 s | Plus | 130 °C | 15 min | 1 kHz

Relative permittivity 2.9

by the criteria of DIN 53483-2 | 60 mW/cm² | 60 s | Plus | 130 °C | 15 min | 1 MHz

Relative permittivity 3.1

by the criteria of DIN 53483-2 | 60 mW/cm² | 60 s | Plus | 130 °C | 15 min | 100 kHz

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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