

DELO DUALBOND® OB6769

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

free of bisphenol A, free of nonylphenols, free of CFC / CHC, free of solvents | low outgassing, filled, low swelling, high-strength, high ion purity, reproducible, low shrinkage, can be fixed quickly, thixotropic | low blooming and odorless, dual-curing, electrically insulating, humidity-resistant, no corrosive effect, light-fixable, low CTE, low-temperature-curing, very high temperature strength, flow-resistant

Special features of product

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

Function

- electronic adhesive

Typical area of use

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

Curing

Suitable lamp types	LED 365 nm	
Typical light fixation time		
<i>intensity 500 mW/cm² LED 365 nm</i>	2 - 6	s
<i>intensity 1,000 mW/cm² LED 365 nm</i>	1 - 3	s
Typical curing time		
<i>at +80 °C in air convection oven</i>	50	min
<i>at +100 °C in air convection oven</i>	20	min

Processing

Typical adhesive application	needle dispensing
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Conditioning time (typical)

*when stored in cold conditions
in containers up to 50 ml* 1 h

Processing time

in standard climate +23 °C / 50 % r. h. 3 d

Storage life in unopened original container

*up to <= 55 ml
at -45 °C to -15 °C* 6 month(s)

Technical properties

Color in uncured condition white

Color in cured condition in 0.1 mm layer thickness whitish

Transparency in cured condition in 0.1 mm layer thickness translucent

Color in cured condition in 1 mm layer thickness whitish

Transparency in cured condition in 1 mm layer thickness opaque

Fluorescence fluorescent

Filler particle type minerals

Filler particle size d95 = 12 µm

Filler content 80 wt. %

Parameters

Density 1.65 g/cm³
DELO Standard 13 | liquid

Viscosity 22500 mPa·s
liquid | Rheometer | Shear rate: 10 1/s | Gap: 500 µm

Maximum curable layer thickness 1.5 mm
*DELO Standard 20 | **white substrate** | 365 nm | 200 mW/cm² | 5 s | Plus | at approx. +23 °C | 24 h*

Compression shear strength 36 MPa
*DELO Standard 5 | **FR4** | **FR4** | 100 °C | 20 min*

Compression shear strength 20 MPa
*DELO Standard 5 | **Glass** | **Glass** | 365 nm | 200 mW/cm² | 5 s | Plus | at approx. +23 °C | 24 h*

Compression shear strength 42 MPa
*DELO Standard 5 | **PPS** | **PPS** | 100 °C | 20 min*

Compression shear strength 41 MPa
*DELO Standard 5 | **PC** | **PC** | 100 °C | 20 min*

Compression shear strength 31 MPa
*DELO Standard 5 | **Stainless steel** | **Stainless steel** | 100 °C | 20 min*

Compression shear strength 41 MPa
*DELO Standard 5 | **Al, anodized** | **Al, anodized** | 100 °C | 20 min*

Tensile strength 65 MPa
Based on DIN EN ISO 527 | 365 nm | 200 mW/cm² | 5 s | Plus | 100 °C | 20 min | Plus | at approx. +23 °C | 24 h

Elongation at tear 0.8 %
Based on DIN EN ISO 527 | 365 nm | 200 mW/cm² | 5 s | Plus | 100 °C | 20 min | Plus | at approx. +23 °C | 24 h

Young's modulus 11000 MPa
DMTA | 365 nm | 200 mW/cm² | 5 s | Plus | 100 °C | 20 min | Plus | at approx. +23 °C | 24 h

Shore hardness D >90
Based on DIN EN ISO 868 | 365 nm | 200 mW/cm² | 5 s | Plus | 100 °C | 20 min | Plus | at approx. +23 °C | 24 h

Glass transition temperature 160 °C
DMTA | 365 nm | 200 mW/cm² | 5 s | Plus | 100 °C | 20 min | Plus | at approx. +23 °C | 24 h

Coefficient of linear expansion 69 ppm/K
DELO Standard 26 | TMA | Evaluation T: 160 °C - 180 °C | 365 nm | 200 mW/cm² | 5 s | Plus | 100 °C | 20 min | Plus | at approx. +23 °C | 24 h

Coefficient of linear expansion 26 ppm/K
DELO Standard 26 | TMA | Evaluation T: -40 °C - 30 °C | 365 nm | 200 mW/cm² | 5 s | Plus | 100 °C | 20 min | Plus | at approx. +23 °C | 24 h

Shrinkage 1.7 vol. %
DELO Standard 13 | 365 nm | 200 mW/cm² | 5 s | Plus | 100 °C | 20 min | Plus | at approx. +23 °C | 24 h

Water absorption 0.08 wt. %
Based on DIN EN ISO 62 | 365 nm | 200 mW/cm² | 5 s | Plus | 100 °C | 20 min | Plus | at approx. +23 °C | 24 h | 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. Nothing contained herein shall be construed to indicate the non-existence of any relevant patents or to constitute a permission, encouragement or recommendation to practice any development covered by any

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All products provided by DELO are subject to DELO's General Terms of Business. Verbal ancillary agreements are deemed not to exist.

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

Nothing contained in this Technical Datasheet shall be interpreted as any express warranty or guarantee. This Technical Datasheet is for reference only and does not constitute a product specification. Please ask our responsible Sales Engineer for the applicable product specification which includes defined ranges. DELO is neither liable for any values and content of this Technical Datasheet nor for oral or written recommendations regarding the use, unless otherwise agreed in writing. This limitation of liability is not applicable for damages resulting from intent, gross negligence or culpable breach of cardinal obligations, nor shall it apply in case of death or personal injury or in case of liability under any applicable compulsory law.

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ADHESIVES

DISPENSING

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