

# DELO DUALBOND® OB749

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

free of solvents | low-temperature-curing, low CTE, dual-curing, light-fixable, low outgassing, filled, low swelling, fast fixation, thixotropic

**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/cm<sup>2</sup> 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
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<i>at +100 °C in air convection oven</i>	30	min
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<i>at +130 °C in air convection oven</i>	15	min
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<i>at +150 °C in air convection oven</i>	10	min
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**Processing**

Typical adhesive application	needle dispensing
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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**

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 <sup>3</sup>
Viscosity <i>liquid   Viscosimeter</i>	14000	mPa·s
Viscosity <i>liquid   Rheometer   Shear rate: 10 1/s   Gap: 500 µm</i>	3000	mPa·s
Maximum curable layer thickness <i>DELO Standard 20   <b>White substrate</b>   400 nm   200 mW/cm<sup>2</sup>   60 s   Plus   at approx. +23 °C   24 h</i>	0.6	mm
Compression shear strength <i>DELO Standard 5   <b>Glass   Glass</b>   400 nm   200 mW/cm<sup>2</sup>   20 s   Plus   at approx. +23 °C   24 h</i>	20	MPa

Tensile strength <i>by the criteria of DIN EN ISO 527   400 nm   200 mW/cm<sup>2</sup>   20 s   Plus   130 °C   15 min</i>	52	MPa
Elongation at tear <i>by the criteria of DIN EN ISO 527   400 nm   200 mW/cm<sup>2</sup>   20 s   Plus   130 °C   15 min</i>	0.9	%
Young's modulus <i>by the criteria of DIN EN ISO 527   400 nm   200 mW/cm<sup>2</sup>   20 s   Plus   130 °C   15 min</i>	6200	MPa
Young's modulus <i>DMTA   400 nm   200 mW/cm<sup>2</sup>   20 s   Plus   130 °C   15 min</i>	6500	MPa
Shore hardness D <i>by the criteria of DIN EN ISO 868   400 nm   200 mW/cm<sup>2</sup>   20 s   Plus   130 °C   15 min</i>	>90	
Glass transition temperature <i>DMTA   400 nm   200 mW/cm<sup>2</sup>   20 s   Plus   130 °C   15 min</i>	182	°C
Coefficient of linear expansion <i>DELO Standard 26   TMA   Evaluation T: 30 °C - 70 °C   400 nm   200 mW/cm<sup>2</sup>   20 s   Plus   130 °C   15 min</i>	44	ppm/K
Coefficient of linear expansion <i>DELO Standard 26   TMA   Evaluation T: 130 °C - 170 °C   400 nm   200 mW/cm<sup>2</sup>   20 s   Plus   130 °C   15 min</i>	93	ppm/K
Shrinkage <i>DELO Standard 13   400 nm   200 mW/cm<sup>2</sup>   20 s   Plus   130 °C   15 min</i>	2.6	vol. %
Water absorption <i>by the criteria of DIN EN ISO 62   Layer thickness: 4 mm   400 nm   200 mW/cm<sup>2</sup>   20 s   Plus   130 °C   15 min   Type of storage: Media   Medium: Distilled water   Duration: 24 h</i>	0.11	wt. %

**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 patents, without permission of the owner of this patent.

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](http://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.

# CONTACT

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