

# DELO<sup>®</sup> KATIOBOND<sup>®</sup> GE680

**modified epoxy resin | 1C | UV-curing**

free of solvents | filled, thixotropic | low CTE

**Special features of product**

- compliant with RoHS Directive 2015/863/EU
- tested for biocompatibility and meets the requirements according to USP 30, NF 25, Class VI

**Function**

- encapsulant / potting compound

**Typical area of use**

- -40 - 150 °C
- encapsulation of chip modules

**Curing**

Suitable lamp types	LED 365 nm, UVA
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Typical irradiation time

<i>intensity 200 mW/cm<sup>2</sup> LED 365 nm</i>	5 s
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**Processing**

Typical adhesive application	needle dispensing
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Conditioning time (typical)

<i>in containers up to 50 ml</i>	1 h
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<i>in containers up to 1,000 ml</i>	6 h
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Processing time

<i>at rt approx. +23 °C in containers up to 50 ml</i>	7 d
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<i>at rt approx. +23 °C in containers up to 900 ml</i>	3 d
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Storage life in unopened original container

<i>at 0 °C to +10 °C</i>	6 month(s)
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### Technical properties

Color in cured condition in 0.1 mm layer thickness	whitish
Transparency in cured condition in 1 mm layer thickness	translucent
Filler particle type	minerals
Filler particle size	d99 = 90 µm
Filler content	78 wt. %

### Parameters

Density <i>Liquid</i>	1.8	g/cm <sup>3</sup>
Viscosity <i>Liquid   Rheometer   Shear rate: 10 1/s   Gap: 500 µm</i>	70000	mPa·s
Thixotropy index <i>Liquid   Rheometer   Gap: 500 µm</i>	2	
Minimum irradiation time <i>DELO Standard 37   DSC   365 nm   200 mW/cm<sup>2</sup>   Measuring temperature: 30 °C</i>	5	s
Maximum curable layer thickness <i>DELO Standard 20   <b>Cardboard</b>   365 nm   200 mW/cm<sup>2</sup>   30 s   Plus   24 h</i>	≥4	mm
Maximum curable layer thickness <i>DELO Standard 20   <b>Cardboard</b>   365 nm   200 mW/cm<sup>2</sup>   5 s   Plus   24 h</i>	3.2	mm
Compression shear strength <i>DELO Standard 5   <b>Glass</b>   <b>PBT</b>   365 nm   200 mW/cm<sup>2</sup>   5 s   Plus   24 h</i>	11	MPa
Compression shear strength <i>DELO Standard 5   <b>Glass</b>   <b>LCP GF30</b>   365 nm   200 mW/cm<sup>2</sup>   5 s   Plus   24 h</i>	7	MPa
Compression shear strength <i>DELO Standard 5   <b>Glass</b>   <b>Glass</b>   365 nm   200 mW/cm<sup>2</sup>   5 s   Plus   24 h</i>	20	MPa
Compression shear strength <i>DELO Standard 5   <b>Glass</b>   <b>FR4</b>   365 nm   200 mW/cm<sup>2</sup>   5 s   Plus   24 h</i>	16	MPa

Compression shear strength 20 MPa  
*DELO Standard 5 | Glass AI | 365 nm | 200 mW/cm<sup>2</sup> | 5 s | Plus | 24 h*

Tensile strength 37 MPa  
*Based on DIN EN ISO 527 | 365 nm | 200 mW/cm<sup>2</sup> | 5 s | Plus | 24 h*

Elongation at tear 0.7 %  
*Based on DIN EN ISO 527 | 365 nm | 200 mW/cm<sup>2</sup> | 5 s | Plus | 24 h*

Young's modulus 16800 MPa  
*DMTA | 365 nm | 200 mW/cm<sup>2</sup> | 5 s | Plus | 24 h*

Shore hardness D >90  
*Based on DIN EN ISO 868 | 365 nm | 200 mW/cm<sup>2</sup> | 5 s | Plus | 24 h*

Glass transition temperature 160 °C  
*DMTA | 365 nm | 200 mW/cm<sup>2</sup> | 5 s | Plus | 24 h*

Coefficient of linear expansion 33 ppm/K  
*DELO Standard 26 | TMA | Evaluation T: 30 °C - 150 °C | 365 nm | 200 mW/cm<sup>2</sup> | 5 s | Plus | 24 h*

Shrinkage 1.7 vol. %  
*DELO Standard 13 | 365 nm | 200 mW/cm<sup>2</sup> | 5 s | Plus | 24 h*

Water absorption 0.06 wt. %  
*Based on DIN EN ISO 62 | 365 nm | 200 mW/cm<sup>2</sup> | 5 s | Plus | 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. 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. 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. 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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