

### **DELO® PHOTOBOND® 4497**

UV- and light curing acrylate adhesive, high viscosity

#### **Base**

- modified acrylate
- one-component, solvent-free, thixotropic

#### **Use**

- suitable for applications requiring a flexible adhesive with a dry surface, e. g., for electronic components
- high-viscous for the equalization of component tolerances and bridging of gaps, e. g., when sealing plastic housings
- the cured product is normally used in a temperature range of -40 °C to +120 °C; depending on the application, other limits may be more reasonable
- compliant with RoHS directive 2015/863/EU
- halogen-free according to IEC 61249-2-21

#### **Processing**

- The cartridge is supplied ready for use
- before use, the bottle container should be homogenized by rolling at 1-2 1/min
- the recommended processing time in the system is 72 h. Afterwards, the rolling process should be repeated. The ideal rolling time at room temperature (ma. 25 °C) is 3 h at 1-2 1/min. It's the user's responsibility to determine the maximum processing time in a system and the rolling time, considering all basic conditions
- in case of cool storage, it must be ensured that the containers are conditioned to room temperature before use
- the containers are conditioned at room temperature (+18 °C to +25 °C); the conditioning time is approx. 0.5 h for containers up to 50 ml and approx. 4 h for containers up to 1,000 ml; additional heat addition is not allowed
- the adhesive can be applied by dispensing
- the surfaces to be bonded must be dry as well as free of dust, grease and other contaminations
- dispensing valves and product-bearing elements must be carefully cleaned before use, residues of other products must be completely removed; isopropanol is recommended to remove DELO PHOTOBOND residues
- for further information please refer to our instructions for use DELO PHOTOBOND and the brochure "Radiation Curing"

## Curing

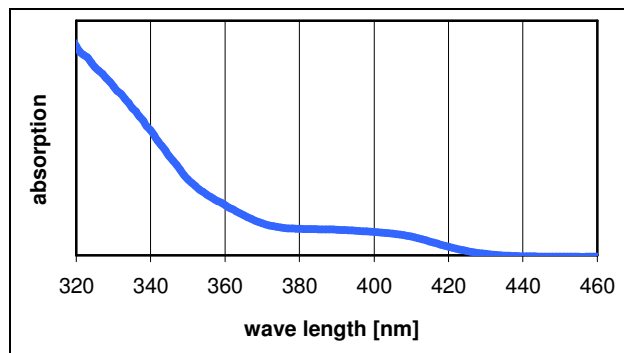
- curing with UV light or visible light in a wavelength range from 320 to 450 nm. DELOLUX LED curing lamps are especially suitable as per the chart below. All standard DELOLUX HID discharge lamps are also suitable
- increased intensities shorten the required irradiation time, lower intensities prolong it

Lamp type	DELOLUX 20 / 50 / 80		
Wavelength [nm]	365	400	460
Suitability	+	++	-

- not suitable + suitable ++ especially suitable

## Absorption spectrum

photoinitiation system in acrylate matrix



## Curing parameters

- dependent on material thickness and absorption, adhesive layer thickness, lamp type and distance between lamp and adhesive layer

## Technical data

### *Color*

cured in a layer thickness of approx. 0.1 mm

milky

### Density [g/cm<sup>3</sup>]

at room temperature (approx. 23 °C)

1.1

### Filler

glass flakes

### Viscosity [mPas]

at 23 °C, Brookfield spindle/rpm 7/5

30000

### Minimal curing time [s]

DELO Standard 23, UVA intensity: 60 mW/cm<sup>2</sup>, DELOLUXcontrol

15

### Minimal curing time [s]

DELO Standard 23, LED 400nm, intensity: 200 mW/cm<sup>2</sup>, DELOLUXcontrol

8

### Surface

dry

### Compression shear strength glass/glass [MPa]

DELO Standard 5

UVA intensity: 55 - 60 mW/cm<sup>2</sup>, DELOLUXcontrol, irradiation time: 60 s

19

### Compression shear strength glass/Al [MPa]

DELO Standard 5

UVA intensity: 55 - 60 mW/cm<sup>2</sup>, DELOLUXcontrol, irradiation time: 60 s

19

### Compression shear strength glass/PC [MPa]

DELO Standard 5

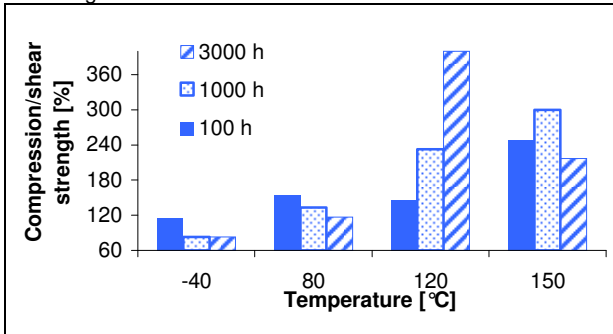
UVA intensity: 55 - 60 mW/cm<sup>2</sup>, DELOLUXcontrol, irradiation time: 60 s

10

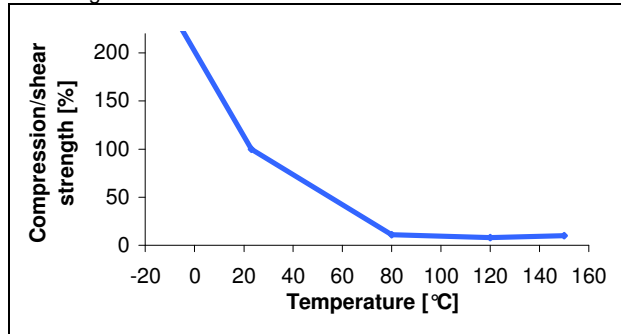
<b>Compression shear strength glass/PMMA [MPa]</b> DELO Standard 5 UVA intensity: 55 - 60 mW/cm <sup>2</sup> , DELOLUXcontrol, irradiation time: 60 s	3
<b>Compression shear strength PC/Al [MPa]</b> DELO Standard 5 UVA intensity: 55 - 60 mW/cm <sup>2</sup> , DELOLUXcontrol, irradiation time: 60 s	4
<b><i>Compression shear strength PC/PC [MPa]</i></b> DELO Standard 5 UVA intensity: 55 - 60 mW/cm <sup>2</sup> , DELOLUXcontrol, irradiation time: 60 s	12
<b>Compression shear strength PMMA/PMMA [MPa]</b> DELO Standard 5 UVA intensity: 55 - 60 mW/cm <sup>2</sup> , DELOLUXcontrol, irradiation time: 60 s	7
<b>Tensile strength [MPa]</b> DIN EN ISO 527	11
<b>Elongation at tear [%]</b> DIN EN ISO 527	200
<b>Young's modulus [MPa]</b> DIN EN ISO 527	84
<b>Shore hardness A</b> according to DIN EN ISO 868	90
<b>Shore hardness D</b> according to DIN EN ISO 868	40
<b>Decomposition temperature [°C]</b> DELO Standard 36	200
<b>Glass transition temperature [°C]</b> rheometer	52
<b>Coefficient of linear expansion [ppm/K]</b> in a temperature range of +25 to +140 °C	208
<b>Shrinkage [vol. %]</b> DELO Standard 13	9
<b>Water absorption [weight %]</b> according to DIN EN ISO 62, 24 h at room temperature (approx. 23 °C)	0.9
<b>Index of refraction</b>	1.498
<b>Creep resistance CTI</b> VDE 0303, part 1, IEC 112	600 M
<b>Storage life</b> at room temperature (0 °C to +25 °C) in unopened original container	6 months

## Performance under temperature influence

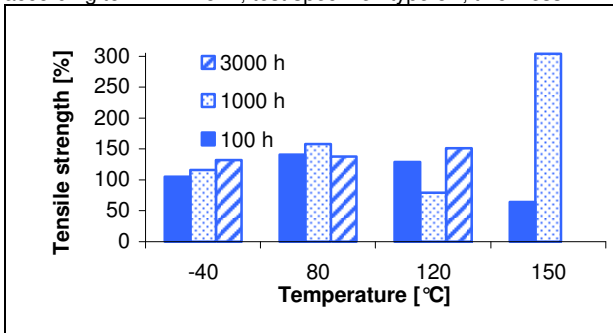
compression/shear strength glass/glass after temperature storage based on initial value at room temperature measured at room temperature (approx. 23 °C) according to DELO standard 5



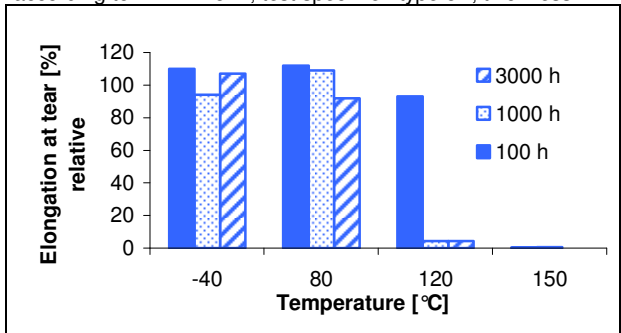
compression/shear strength glass/glass at temperature based on initial value at room temperature measured at determined temperature according to DELO standard



tensile strength after temperature storage based on absolute initial value at room temperature measured at room temperature (approx. 23 °C) according to DIN EN 527, test specimen type 5A, thickness 2 mm



elongation at tear after temperature storage based on initial value at room temperature measured at room temperature (approx. 23 °C) according to DIN EN 527, test specimen type 5A, thickness 2 mm



## Performance under chemical influence

Chemical medium	Compression/shear strength glass/Al [%]
ATF gear oil	118
Diesel fuel	85
engine oil 10W40	112

## **Instructions and advice**

### **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**

The instructions for use of DELO PHOTOBOND are available on: [www.DELO.de](http://www.DELO.de). We will be pleased to send them to you on demand.

### **Occupational health and safety**

see material safety data sheet

### **Specification**

The properties in italics are part of the specification. Ranges with clear limits are defined for them and others, where applicable. In the course of the QA test, each batch is tested for these properties and the maintenance of the limits is ensured. The measuring methods used can deviate from those specified in the data sheet. Details can be found in the QA test report.