

### **DELO-PHOTOBOND® PB437**

UV- and light curing acrylate adhesive, medium viscosity

#### **Base**

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

#### **Use**

- excellent for the bonding of plastics, especially PMMA and PC, e. g., bonding of mobile phone windows
- very good adhesion to glass and metal for interior use
- very fast curing
- 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 2011/65/EU

#### **Processing**

- the adhesive is supplied ready for use
- 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 totally be completely removed; DELOTHEN EP as well as acetone, isopropanol or a mixture of both are recommended to remove DELO-PHOTOBOND residues
- for further information please refer to our instructions for use DELO-PHOTOBOND and the brochure "Light Curing"

#### **Curing**

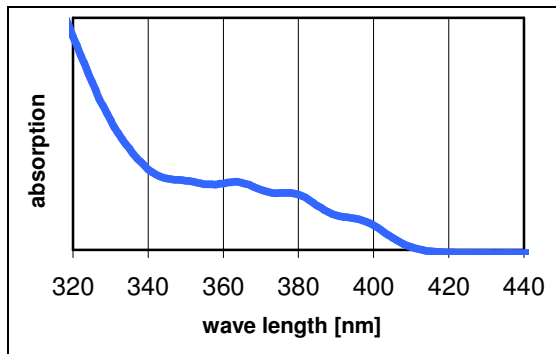
- curing with UV light or visible light in a wavelength range from 320 to 420 nm. DELOLUX LED curing lamps are especially suitable as per the chart below. All standard DELOLUX HID discharge lamps are also suitable
- increased intensities shorten the required irradiation time, lower intensities prolong 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

colorless clear

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

at room temperature (approx. 23 °C)

1.0

### *Viscosity [mPas]*

at 23 °C, Brookfield rpm 4/5

8000

### *Minimal curing time [s]*

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

6

### *Minimal curing time [s]*

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

3

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

DELO Standard 5

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

31

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

DELO Standard 5

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

30

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

DELO Standard 5

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

31

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

DELO Standard 5

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

14

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

DELO Standard 5

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

8

### *Compression shear strength PC/Al [MPa]*

DELO Standard 5

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

9

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

DELO Standard 5

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

22

### *Compression shear strength PA/PMMA [MPa]*

DELO Standard 5

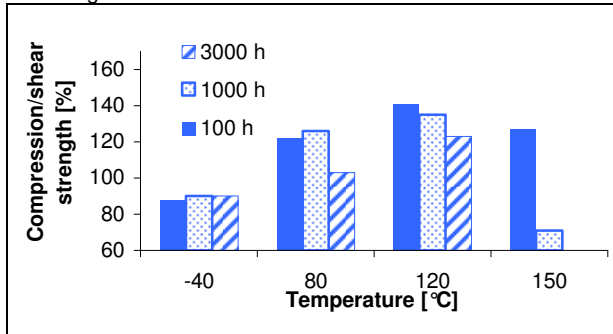
UVA intensity: 55 - 60 mW/cm<sup>2</sup>, DELOLUXcontrol, irradiation time: 60 s

12

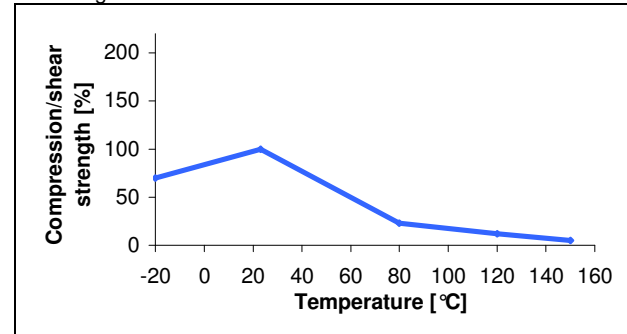
<b>Compression shear strength PMMA/PMMA [MPa]</b> DELO Standard 5 UVA intensity: 55 - 60 mW/cm <sup>2</sup> , DELOLUXcontrol, irradiation time: 60 s	9
<b>Tensile strength [MPa]</b> DIN EN ISO 527	21
<b>Elongation at tear [%]</b> DIN EN ISO 527	110
<b>Young's modulus [MPa]</b> DIN EN ISO 527	520
<b>Shore hardness D</b> according to DIN EN ISO 868	65
<b>Decomposition temperature [°C]</b> DELO Standard 36	195
<b>Glass transition temperature [°C]</b> rheometer	114
<b>Coefficient of linear expansion [ppm/K]</b> in a temperature range of +25 to +140 °C	184
<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)	1.0
<b>Specific volume resistance [<math>\Omega</math>cm]</b> VDE 0303, part 3	>1xE13
<b>Surface resistance [<math>\Omega</math>]</b> VDE 0303, part 3	>1xE13
<b>Creep resistance CTI</b> VDE 0303, part 1, IEC 112	600 M
<b>Storage life</b> at room temperature (+18 °C to +25 °C) in unopened original container	12 months

## Performance under temperature influence

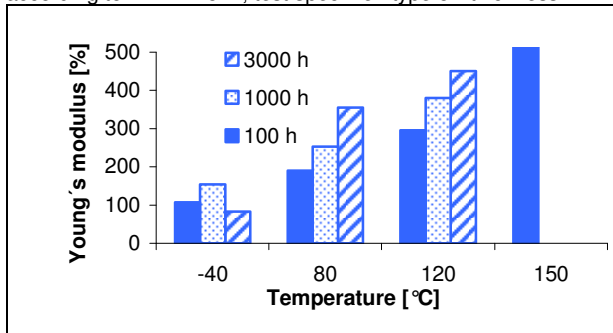
compression/shear strength glass/glass after temperature storage based on initial value at room temperature measured at room temperature (approx. 23 °C) according to DELO standard 5



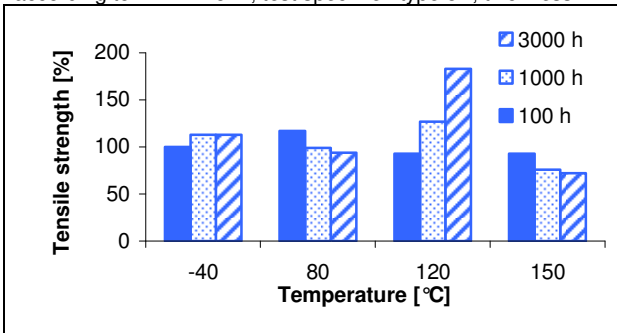
compression/shear strength glass/glass at temperature based on initial value at room temperature measured at determined temperature according to DELO standard 5



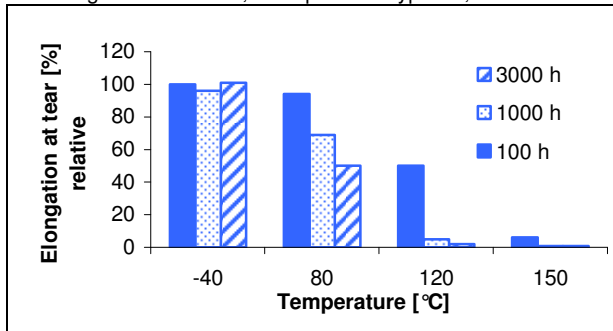
Young's modulus after temperature storage based on initial value at room temperature measured at room temperature (approx. 23 °C) according to DIN EN 527, test specimen type 5A thickness 2 mm



tensile strength 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



elongation at tear 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



## Performance under chemical influence

compression shear strength after storage for 1,000 h based on initial value at room temperature measured at room temperature (approx. 23 °C) according to DELO Standard 5

Chemical medium	Compression/shear strength glass/Al [%]
ATF gear oil	73
Diesel fuel	76
engine oil 10W40	95

## **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.

Many product properties are subject to temperature and may change permanently, especially at high temperatures.

It is the user's responsibility to test the suitability of the product for the intended purpose and temperature range of use by considering all specific requirements. Type and 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. 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.