DELO® PHOTOBOND® 4442
UV- and light curing acrylate adhesive, low viscosity

**Base**
- modified acrylate
- one-component, solvent-free

**Use**
- for elastic coatings, as sealant and adhesive for foils, bonding of membranes and coils in loudspeakers
- suitable for electronic applications due to its low corrosion potential
- well suitable for plastics sensitive to stress cracking
- permanently elastic, even at low temperatures down to -40 °C
- tested for biocompatibility and meets the requirements according to USP 23, 1995, for Class VI Plastics -70 °C
- 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

**Processing**
- the adhesive is supplied ready for use; in case of cool storage, it must be ensured that the container is 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 “Light 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

<table>
<thead>
<tr>
<th>Lamp type</th>
<th>DELOLUX 20 / 50 / 80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength [nm]</td>
<td>365</td>
</tr>
<tr>
<td>Suitability</td>
<td>+</td>
</tr>
</tbody>
</table>

- 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/cm³]**
at room temperature (approx. 23 °C)
1.0

**Viscosity [mPas]**
at 23 °C, Brookfield spindle/rpm 3/100
650

**Minimal curing time [s]**
DELO Standard 23, UVA intensity: 60 mW/cm², DELOLUXcontrol
60

**Minimal curing time [s]**
DELO Standard 23, LED 400nm, intensity: 200 mW/cm², DELOLUXcontrol
28

**Surface**
tacky

**Compression shear strength glass/glass [MPa]**
DELO Standard 5
UVA intensity: 55 - 60 mW/cm², DELOLUXcontrol, irradiation time: 60 s
4

**Compression shear strength glass/Al [MPa]**
DELO Standard 5
UVA intensity: 55 - 60 mW/cm², DELOLUXcontrol, irradiation time: 60 s
4

**Compression shear strength glass/PC [MPa]**
DELO Standard 5
UVA intensity: 55 - 60 mW/cm², DELOLUXcontrol, irradiation time: 60 s
5

**Compression shear strength glass/PMMA [MPa]**
DELO Standard 5
UVA intensity: 55 - 60 mW/cm², DELOLUXcontrol, irradiation time: 60 s
3

**Compression shear strength PC/Al [MPa]**
DELO Standard 5
UVA intensity: 55 - 60 mW/cm², DELOLUXcontrol, irradiation time: 60 s
2

**Compression shear strength PC/PC [MPa]**
DELO Standard 5
UVA intensity: 55 - 60 mW/cm², DELOLUXcontrol, irradiation time: 60 s
6

**Compression shear strength PMMA/PMMA [MPa]**
DELO Standard 5
UVA intensity: 55 - 60 mW/cm², DELOLUXcontrol, irradiation time: 60 s
2
Tensile strength [MPa] according to DIN EN ISO 527

Elongation at tear [%] according to DIN EN ISO 527

Compression shear strength after aging

<table>
<thead>
<tr>
<th>Method of Aging</th>
<th>Glass/Al</th>
<th>Glass/PC</th>
<th>PC/Al</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: initial value</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>B: 7 days at 80°C</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>C: 2 weeks climatic test</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>D: 4 weeks climatic test</td>
<td>12.5%</td>
<td>12.5%</td>
<td>12.5%</td>
</tr>
</tbody>
</table>

Material properties after aging

<table>
<thead>
<tr>
<th>Property</th>
<th>Glass/Al</th>
<th>Glass/PC</th>
<th>PC/Al</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elongation at tear [%]</td>
<td>300%</td>
<td>300%</td>
<td>300%</td>
</tr>
<tr>
<td>Tensile strength [MPa]</td>
<td>3 MPa</td>
<td>3 MPa</td>
<td>3 MPa</td>
</tr>
</tbody>
</table>

Shore hardness A according to DIN EN ISO 868

 Decomposition temperature [°C] DELO Standard 36

 Glass transition temperature [°C] rheometer

 Coefficient of linear expansion [ppm/K] in a temperature range of +25 to +140 °C

 Shrinkage [vol. %] DELO Standard 13

 Water absorption [weight %] according to DIN EN ISO 62, 24 h at room temperature (approx. 23 °C)

 Index of refraction 1.5

 Creep resistance CTI VDE 0303, part 1, IEC 112

 Storage life at room temperature (0 °C to +25 °C) in unopened original container

3 months
Storage life
at 0 °C to +10 °C in unopened original container

6 months

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. 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.