

### **DELO-DUALBOND® AD465**

UV-/light-/heat curing adhesive, medium viscosity

#### **Base**

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

#### **Use**

- dualcuring adhesive for electronic applications: pin casting, pin sealing
- 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

#### **Processing**

- the adhesive is supplied ready for use; in case of cool or refrigerated storage, it must be ensured that the container is conditioned to room temperature before use
- the containers are conditioned at room temperature (max. 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 is usually applied by dispensing
- the adhesive can be processed well from the original container or with DELO dispensing units
- the surfaces to be bonded must be dry as well as free of dust, grease and other contaminations
- use DELOTHEN cleaners for the cleaning of bonding surfaces

#### **Curing**

- curing with UV light and visible light in a wavelength range of 320 - 420 nm
- in shadowed areas, the product can be cured with heat
- the light-curing mechanism and the heat-curing mechanism can be used independently
- the product was designed for curing with light in seconds; shadowed areas can be cured with heat

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

- not suitable + suitable ++ especially suitable

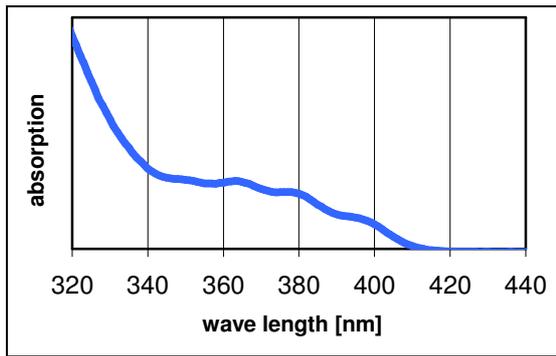
#### **Curing parameters**

- in case of light curing dependent on material thickness and absorption, adhesive layer thickness, lamp type and distance between lamp and adhesive layer
- for the heat curing of shadowed areas a temperature of +130 °C can be preferably applied
- the minimal curing temperature is +110 °C
- the heating time of the components must be added to the curing time
- the heating time should not exceed 15 min

**DELO** Industrial Adhesives  
DELO-Allee 1  
86949 Windach · Germany  
Phone +49 8193 9900-0  
Fax +49 8193 9900-144  
info@DELO.de · www.DELO.de

## Absorption spectrum

- photoinitiation system in acrylate matrix



## Technical data

### *Color*

cured in a layer thickness of approx. 0.1 mm

red fluorescent

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

at room temperature (approx. 23 °C)

1.1

### Viscosity [mPas]

at 23 °C, Brookfield rpm 7/5

24000

### Viscosity [mPas]

at 23 °C, rheometer, PP20, gap 500µm, shear rate 2/s

14500

### Processing time

30ml cartridges at room temperature (max. 25 °C)

2 weeks

### Processing time

180ml cartridges at room temperature (max. 25 °C)

5 days

### Processing time

600ml, 900ml cartridge and 1l bottle at room temperature (max. 25 °C)

24 hours

### Minimal curing time [s]

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

4

### Minimal curing time [s]

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

2

### Curing time until final strength [min]

at +110 °C

5

### Curing time until final strength [min]

at +130 °C

3

### Surface after curing

dry

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

DELO Standard 5

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

23

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

DELO Standard 5

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

22

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

DELO Standard 5

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

19

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

DELO Standard 5

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

14

<b>Compression shear strength glass/PBT [MPa]</b> DELO Standard 5 UVA intensity: 55 - 60 mW/cm <sup>2</sup> ; DELOLUXcontrol, irradiation time: 60 s	5
<b>Compression shear strength glass/FR4 [MPa]</b> DELO Standard 5 UVA intensity: 55 - 60 mW/cm <sup>2</sup> ; DELOLUXcontrol, irradiation time: 60 s	21
<b>Tensile strength [MPa]</b> DIN EN ISO 527	17
<b>Elongation at tear [%]</b> DIN EN ISO 527	220
<b>Young's modulus [MPa]</b> DIN EN ISO 527	320
<b>Shore hardness D</b> according to DIN EN ISO 868	50
<b>Glass transition temperature [°C]</b> rheometer	100
<b>Shrinkage [vol. %]</b> DELO Standard 13	5.6
<b>Ion content Cl- [ppm]</b> extraction	<5
<b>Ion content F- [ppm]</b> extraction	<5
<b>Ion content K+ [ppm]</b> extraction	<5
<b>Ion content Na+ [ppm]</b> extraction	<5
<b>Water absorption [weight %]</b> according to DIN EN ISO 62, 24 h at room temperature (approx. 23 °C)	1.2
<b>Storage life</b> 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 the product for the intended purpose 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. The data and information provided are therefore no guarantee for specific product properties or the suitability of the product for the intended 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 DELOs' General Terms of Business. Verbal side agreements are not permitted. This document is subject to change.

### **Instructions for use**

The instructions for use of DELO-DUALBOND 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.