

DELO® PHOTOBOND® AD413

UV- and light curing adhesive, low viscosity

Base

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

Use

- for casting applications
- 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
- 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

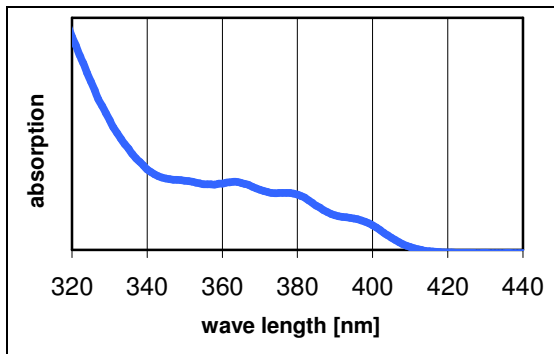
- curing with UV light or visible light in a wavelength range from 320 to 420 nm. DELOLUX LED curing lamps are especially suitable as per the chart below. All standard DELOLUX HID discharge lamps are also suitable
- increased intensities shorten the required irradiation time, lower intensities prolong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

yellowish

Density [g/cm³]

at room temperature (approx. 23 °C)

1.0

Viscosity [mPas]

at 23 °C, Brookfield spm 3/10

1600

Minimal curing time [s]

DELO Standard 23, UVA intensity: 60 mW/cm², DELOLUXcontrol

8

Minimal curing time [s]

DELO Standard 23, LED intensity: 200 mW/cm², DELOLUXcontrol

3

Compression shear strength glass/glass [MPa]

DELO Standard 5

UVA intensity: 55 - 60 mW/cm², DELOLUXcontrol, irradiation time: 60 s

10

Compression shear strength glass/PBT [MPa]

DELO Standard 5

UVA intensity: 55 - 60 mW/cm²; DELOLUXcontrol, irradiation time: 60 s

4

Compression shear strength glass/PA [MPa]

DELO Standard 5

UVA intensity: 55 - 60 mW/cm², DELOLUXcontrol, irradiation time: 60 s

12

Compression shear strength PMMA/PMMA [MPa]

DELO Standard 5

UVA intensity: 55 - 60 mW/cm², DELOLUXcontrol, irradiation time: 60 s

9

Compression shear strength PC/PC [MPa]

DELO Standard 5

UVA intensity: 55 - 60 mW/cm², DELOLUXcontrol, irradiation time: 60 s

20

Tensile strength [MPa]

DIN EN ISO 527

15

Elongation at tear [%]

DIN EN ISO 527

250

Young's modulus [MPa]

DIN EN ISO 527

70

Shore hardness A

according to DIN EN ISO 868

90

Shore hardness D according to DIN EN ISO 868	35
Glass transition temperature [°C] rheometer	70
Water absorption [weight %] according to DIN EN ISO 62, 24 h at room temperature (approx. 23 °C)	0.9
Dielectric strength [kV/mm] VDE 0303, part 2	14
Dielectric constant RF-IV method, 1 MHz, at 25 °C +/- 3 °C	3.8
Dielectric constant RF-IV method, 10 MHz, at 25 °C +/- 3 °C	3.4
Dielectric constant RF-IV method, 100 MHz, at 25 °C +/- 3 °C	3.2
Dielectric constant RF-IV method, 1 GHz, at 25 °C +/- 3 °C	3.0
Decomposition temperature [°C] DELO Standard 36	220
Storage life at room temperature (+18 °C to +25 °C) in unopened original container	6 months
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	155
Diesel fuel	110
biodiesel	130
engine oil 10W40	165

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