

DELO® PHOTOBOND® AD494

UV- and light curing acrylate adhesive, high viscosity

Base

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

Use

- multi-purpose for plastic/plastic, glass/plastic, metal/plastic and glass/glass bondings, e. g., bonding of glass into plastic frames or clips to glass
- combined light and UV curing also enables the curing of components which are difficult to transmit
- good equalization of tensions due to high elongation at tear
- high viscosity enables adhesive layer thicknesses of up to approx. 2 mm
- 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
- successfully tested according to UL 94 HB (by an independent test institute)

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

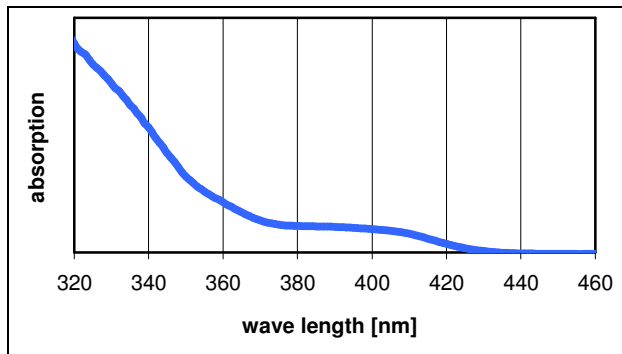
Lamp type	DELOLUX 20 / 50 / 80		
Wavelength [nm]	365	400	460
Suitability	+	++	-

- not suitable + suitable ++ especially suitable

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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)

1.1

Viscosity [mPas]

at 23 °C, Brookfield spindle/rpm 7/5

50000

Viscosity [mPas]

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

32000

Minimal curing time [s]

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

14

Minimal curing time [s]

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

9

Surface

tacky

Compression shear strength glass/glass [MPa]

DELO Standard 5

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

13

Compression shear strength glass/Al [MPa]

DELO Standard 5

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

12

Compression shear strength glass/stainless steel [MPa]

DELO Standard 5

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

13

Compression shear strength glass/PC [MPa]

DELO Standard 5

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

13

Compression shear strength glass/PMMA [MPa]

DELO Standard 5

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

9

Compression shear strength PC/ABS [MPa]

DELO Standard 5

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

12

Compression shear strength PC/Al [MPa] DELO Standard 5 UVA intensity: 55 - 60 mW/cm ² , DELOLUXcontrol, irradiation time: 60 s	10
Compression shear strength PA/PC [MPa] DELO Standard 5 UVA intensity: 55 - 60 mW/cm ² , DELOLUXcontrol, irradiation time: 60 s	11
Compression shear strength FR4/PA [MPa] DELO Standard 5 UVA intensity: 55 - 60 mW/cm ² , DELOLUXcontrol, irradiation time: 60 s	12
Compression shear strength PS/PS [MPa] DELO Standard 5 UVA intensity: 55 - 60 mW/cm ² , DELOLUXcontrol, irradiation time: 60 s	10
<i>Compression shear strength PC/PC [MPa]</i> DELO Standard 5 UVA intensity: 55 - 60 mW/cm ² , DELOLUXcontrol, irradiation time: 60 s	18
Tensile strength [MPa] according to DIN EN ISO 527	13
Elongation at tear [%] according to DIN EN ISO 527	310
Young's modulus [MPa] according to DIN EN ISO 527	20
Young's modulus [MPa] DMTA, tensile measurement, at room temperature (approx. 23 °C) 2nd measurement run	340
Shore hardness A according to DIN EN ISO 868	82
Shore hardness D according to DIN EN ISO 868	25
Decomposition temperature [°C]	225
Glass transition temperature [°C]	48
Shrinkage [vol. %] DELO Standard 13	6.8
Water absorption [weight %] according to DIN EN ISO 62, 24 h at room temperature (approx. 23 °C)	3
Storage life at room temperature (0 °C to +25 °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.