

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; 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 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

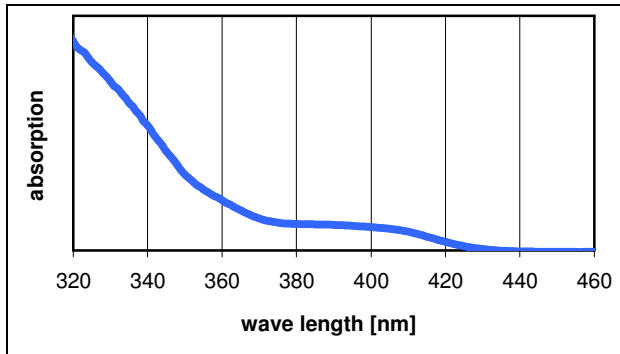
Lamp type	DELOLUX 20 / 50 / 80		
Wavelength [nm]	365	400	460
Suitability	+	++	-

- 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)

1.0

Viscosity [mPas]

at 23 °C, Brookfield 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

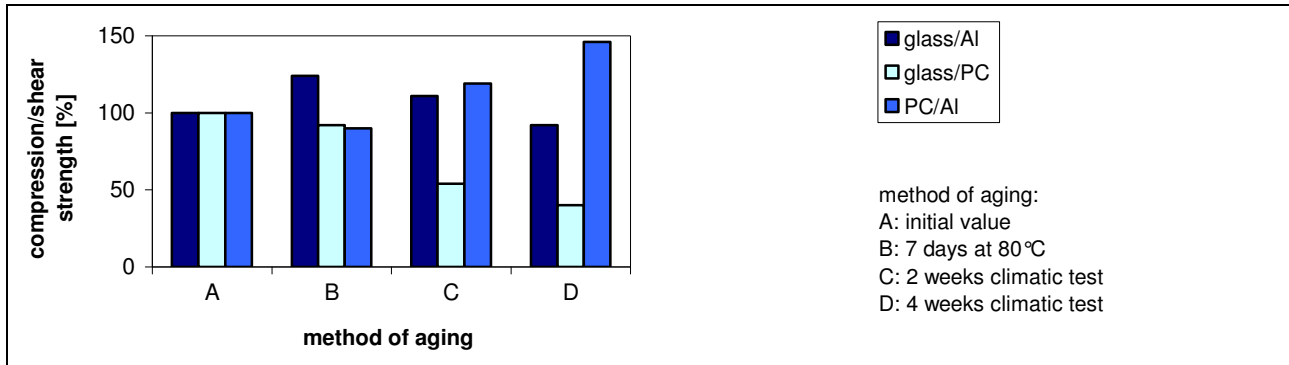
Tensile strength [MPa]
DIN EN ISO 527

3

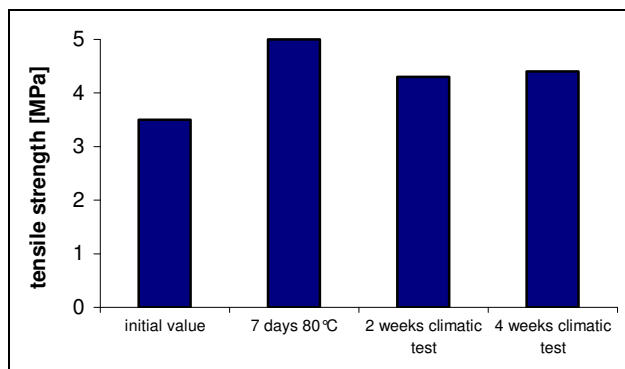
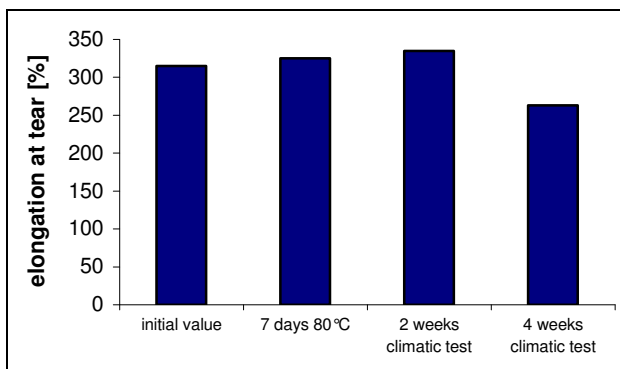
Elongation at tear [%]
DIN EN ISO 527

300

Compression shear strength
after aging



Material properties
after aging



Shore hardness A
according to DIN EN ISO 868

30

Decomposition temperature [°C]
DELO Standard 36

200

Glass transition temperature [°C]
rheometer

18

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

254

Shrinkage [vol. %]
DELO Standard 13

6

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

0.6

Index of refraction

1.5

Creep resistance CTI
VDE 0303, part 1, IEC 112

600 M

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 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-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.