

DELO® PHOTOBOND® LP4224

UV- and light curing adhesive with high barrier function against water vapour

Base

- modified acrylate
- one-component, solvent-free

Use

- due to the high permeation resistance against water vapor, the product is especially suitable for the sealing of sensitive components, e. g. flexible photovoltaic cells, E-Paper, barrier films
- very low water absorption
- for edge sealing and flat bonding
- for the bonding of glass, ITO-coated glass and other materials
- 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
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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 NK1 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

- with UV light or visible light in a wavelength range of 320 - 450 nm

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

- not suitable + suitable ++ especially suitable

Curing parameters

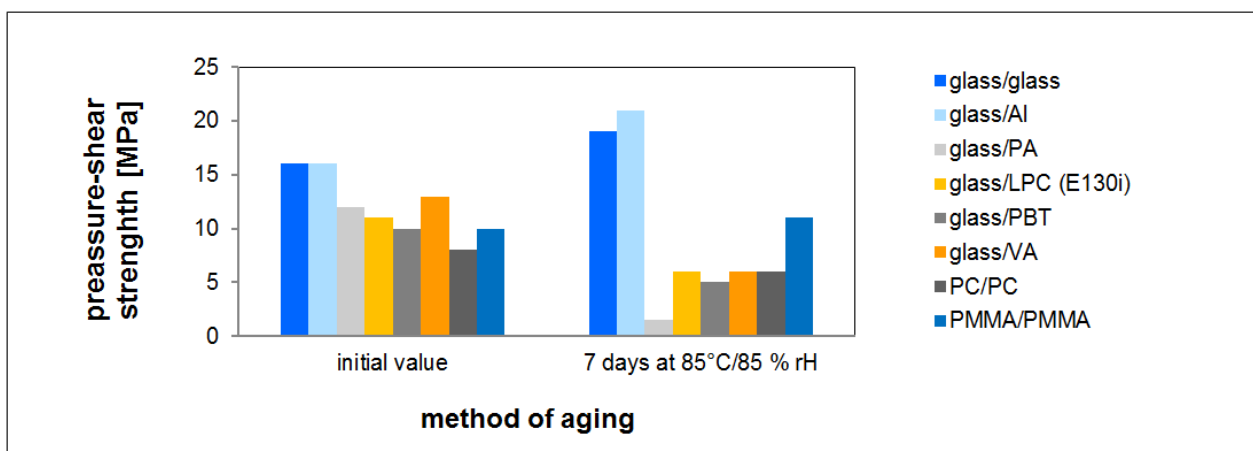
- dependent on material thickness and absorption, adhesive layer thickness, lamp type and distance between lamp and adhesive layer

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Technical data

Color cured in a layer thickness of approx. 0.1 mm	colorless clear
Viscosity [mPas] rheometer, PP20, gap 500µm, shear rate 2 1/s, at room temperature (23 °C)	1200
Density [weight %] DELO Standard 13 uncured adhesive at room temperature (approx. +23 °C)	1.0
Minimal irradiation time [s] DELO Standard 23, LED 400nm, intensity: 200 mW/cm ² , DELOLUXcontrol	10
Compression shear strength glass/glass [MPa] DELO Standard 5 LED 400 nm, intensity: 200 mW/cm ² DELOLUXcontrol, irradiation time: 30 s	16
Compression shear strength glass/Al [MPa] DELO Standard 5 LED 400 nm, intensity: 200 mW/cm ² DELOLUXcontrol, irradiation time: 30 s	16
Compression shear strength glass/PA [MPa] DELO Standard 5 LED 400 nm, intensity: 200 mW/cm ² DELOLUXcontrol, irradiation time: 30 s	12
Compression shear strength glass/LCP (E130i) [MPa] DELO Standard 5 LED 400 nm, intensity: 200 mW/cm ² DELOLUXcontrol, irradiation time: 30 s	11
Compression shear strength glass/PBT [MPa] DELO Standard 5 LED 400 nm, intensity: 200 mW/cm ² DELOLUXcontrol, irradiation time: 30 s	10
Compression shear strength glass/stainless steel [MPa] DELO Standard 5 LED 400 nm, intensity: 200 mW/cm ² DELOLUXcontrol, irradiation time: 30 s	13
Compression shear strength PC/PC [MPa] DELO Standard 5 LED 400 nm, intensity: 200 mW/cm ² DELOLUXcontrol, irradiation time: 30 s	8
Compression shear strength PMMA/PMMA [MPa] DELO Standard 5 LED 400 nm, intensity: 200 mW/cm ² DELOLUXcontrol, irradiation time: 30 s	10

Performance under temperature and media influence



Tensile strength [MPa] according to DIN EN ISO 527	14
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Elongation at tear [%] according to DIN EN ISO 527	220
Young's modulus [MPa] according to DIN EN ISO 527	280
Shore hardness D according to DIN EN ISO 868	50
Glass transition temperature [°C] DMTA, tensile measurement 2nd measurement run	70
Volume shrinkage [vol. %] DELO Standard 13 at room temperature (approx. 23 °C)	6
Water absorption [%] according to DIN EN ISO 62	0.1
Water permeation [g/(m ² -d)] according to ASTM E96 at +60 °C and 90 % relative humidity layer thickness: 1 mm	10
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. This product is still a development product and therefore subject to modifications.

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.