

DELO® KATIOBOND® LP655

Light-/UV-curing adhesive with high barrier function against water vapour

Base

- modified epoxy resin
- one-component, solvent-free, UV-/light-curing

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
- 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

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 (max. 25 °C); the conditioning time is approx. 4 h for containers up to 1,000 ml and approx. 12 h for containers up to 10 litre; additional heat addition is not allowed
- the adhesive is usually applied by dispensing or roller application
- the adhesive can be processed well from the original container
- 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
- when using aqueous cleaners with alkaline properties, they must be removed from the bonding surface after cleaning through appropriate rinsing cycles
- 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 KATIOBOND residues
- for further information please refer to our instructions for use DELO KATIOBOND

Curing

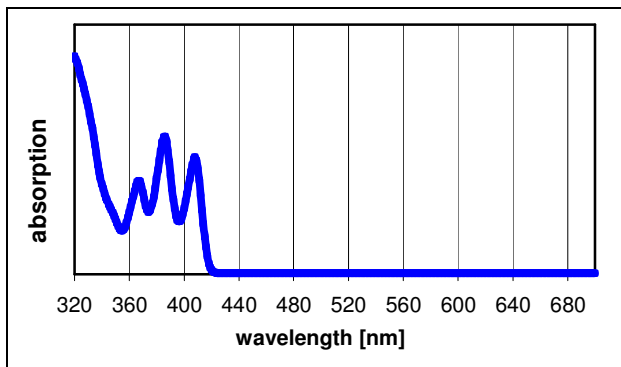
- curing with UV light or visible light in a wavelength range of 320 – 440 nm. DELOLUX LED curing lamps are especially suitable as per the chart below. All standard DELOLUX HID discharge lamps are also suitable.
- after irradiation curing until final strength within 24 h at room temperature
- increased temperatures accelerate the reaction, lower temperature decelerate it
- 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 epoxy resin basic 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 transparent

Color

cured in a layer thickness of approx. 1 mm

yellowish translucent

Density [g/cm³]

DELO Standard 13
at room temperature (approx. 23 °C)

1.38

Viscosity [mPas]

rheometer, CP20, shear rate 10 1/s, at room temperature (23 °C)

12000

Processing time

at room temperature (max. 25 °C)

4 weeks

Minimal irradiation time [s]

DELO Standard 37, DSC
LED 400 nm, intensity: 200 mW/cm²; DELOLUXcontrol

10

Recommended irradiation time [s]

LED 400nm, intensity: 200 mW/cm² DELOLUXcontrol

20

Curing time until final strength [h]

at room temperature (approx. 23 °C) after irradiation

24

Max. curable layer thickness	0.7
DELO Standard 20 LED 400 nm, intensity: 200 mW/cm ² DELOLUXcontrol, 60 s	
<i>Compression shear strength glass/glass [MPa]</i>	9
DELO Standard 5 LED 400 nm, intensity: 200 mW/cm ² DELOLUXcontrol, irradiation time: 20 s curing time: 24 h at room temperature (approx. 23 °C)	
Compression shear strength glass/Al [MPa]	12
DELO Standard 5 LED 400 nm, intensity: 200 mW/cm ² DELOLUXcontrol, irradiation time: 20 s curing time: 24 h at room temperature (approx. 23 °C)	
Compression shear strength glass/PC [MPa]	3
DELO Standard 5 LED 400 nm, intensity: 200 mW/cm ² DELOLUXcontrol, irradiation time: 20 s curing time: 24 h at room temperature (approx. 23 °C)	
Tensile strength [MPa]	22
according to DIN EN ISO 527 LED 400 nm, intensity: 200 mW/cm ² DELOLUXcontrol, irradiation time: 60 s after 24 h at room temperature (approx. 23 °C)	
Elongation at tear [%]	1
according to DIN EN ISO 527 LED 400 nm, intensity: 200 mW/cm ² DELOLUXcontrol, irradiation time: 60 s after 24 h at room temperature (approx. 23 °C)	
Young's modulus [MPa]	3100
according to DIN EN ISO 527 LED 400 nm, intensity: 200 mW/cm ² DELOLUXcontrol, irradiation time: 60 s after 24 h at room temperature (approx. 23 °C)	
Shore hardness D	84
according to DIN EN ISO 868 LED 400 nm, intensity: 200 mW/cm ² , DELOLUXcontrol, 60 s after 24 h at room temperature (approx. 23 °C)	
Glass transition temperature [°C]	183
DMTA, 3 Point Bending 2nd measurement run	
Coefficient of linear expansion [ppm/K]	45
TMA, DELO-Norm 26 im Temperaturbereich: +30 °C bis +40 °C	
Coefficient of linear expansion [ppm/K]	132
TMA, DELO Standard 26 in a temperature range of +140 °C to +150 °C	
Decomposition temperature [°C]	299
DELO Standard 36	
Shrinkage [vol. %]	2.5
DELO Standard 13	
Water permeation [g/(m²·d)]	6
according to ASTM E96 at +60 °C and 90 % relative humidity layer thickness: 1 mm	
Dielectric constant	3.1
RF-IV method, 1 MHz, at 25 °C +/- 3 °C	
Dielectric constant	3.2
RF-IV method, 10 MHz, at 25 °C +/- 3 °C	
Dielectric constant	3.1
RF-IV method, 100 MHz, at 25 °C +/- 3 °C	

Dielectric constant RF-IV method, 1 GHz, at 25 °C +/- 3 °C	3.0
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 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 KATIOBOND 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.