

### **DELO DUALBOND® MF4992**

light and humidity-curing acrylate adhesive, high viscosity

#### **Base**

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

#### **Use**

- for the peeling resistant bonding of membranes and coils in mini loudspeakers
- multi-purpose for plastic/plastic, glass/plastic, metal/plastic, glass/glass and glass/metal bondings
- easy application control due to fluorescent color with emission wavelengths of about 440 and 610nm
- the cured product is normally used in a temperature range of -40°C to +150°C; depending on the application, other limits may be more reasonable
- compliant with RoHS directive 2015/863/EU

#### **Processing**

- supplied ready for use; in case of cold 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
- can be processed well from the original container or with DELO dispensing units
- 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
- use DELOTHEN EP cleaner for the cleaning of glass

#### **Curing**

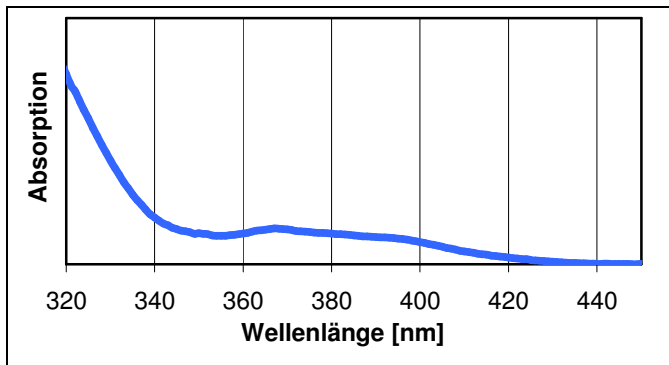
- with UV light or visible light in a wavelength range of 320 - 450 nm and by humidity in shadow zones
- humidity curing starts at the surface of the acrylate; a skin is formed after a few hours; deep curing of the acrylate proceeds with approx. 2mm/24h
- the adhesive can be cured within seconds with light. It is recommended to determine adhesive strength after 72h, since the full performance of the adhesive can be achieved only after humidity curing took place

#### **Curing parameters**

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

## Absorption spectrum

- photoinitiation system in acrylate matrix



## Technical data

*Color*

cured

red fluorescent

*Density [g/cm<sup>3</sup>]*

DELO standard 13

1.06

*Viscosity [mPas]*

at 23 °C, rheometer, 2 1/s

100000

*Minimal curing time [s]*

DELO Standard 23, LED 400nm, intensity: 200 mW/cm<sup>2</sup>, DELOLUXcontrol

13

*Compression shear strength glass/glass [MPa]*

DELO Standard 5

LED 400nm, intensity: 60 mW/cm<sup>2</sup> DELOLUXcontrol, irradiation time: 60 s  
curing time: 72h at room temperature (23°C/50% rH)

9

*Compression shear strength glass/stainless steel [MPa]*

DELO Standard 5

LED 400nm, intensity: 60 mW/cm<sup>2</sup> DELOLUXcontrol, irradiation time: 60 s  
curing time: 72h at room temperature (23°C/50% rH)

6

*Compression shear strength glass/Al [MPa]*

DELO Standard 5

LED 400nm, intensity: 60 mW/cm<sup>2</sup> DELOLUXcontrol, irradiation time: 60 s  
curing time: 72h at room temperature (23°C/50% rH)

8

*Compression shear strength PC/PC [MPa]*

DELO Standard 5

LED 400nm, intensity: 60 mW/cm<sup>2</sup> DELOLUXcontrol, irradiation time: 60 s  
curing time: 72h at room temperature (23°C/50% rH)

8

*Compression shear strength glass/PA [MPa]*

DELO Standard 5

LED 400nm, intensity: 60 mW/cm<sup>2</sup> DELOLUXcontrol, irradiation time: 60 s  
curing time: 72h at room temperature (23°C/50% rH)

8

*Compression shear strength glass/PBT [MPa]*

DELO Standard 5

LED 400nm, intensity: 60 mW/cm<sup>2</sup> DELOLUXcontrol, irradiation time: 60 s  
curing time: 72h at room temperature (23°C/50% rH)

4

*Compression shear strength glass/FR4 [MPa]*

DELO Standard 5

LED 400nm, intensity: 60 mW/cm<sup>2</sup> DELOLUXcontrol, irradiation time: 60 s  
curing time: 72h at room temperature (23°C/50% rH)

9

*Compression shear strength glass/PC-ABS [MPa]*

DELO Standard 5

LED 400nm, intensity: 60 mW/cm<sup>2</sup> DELOLUXcontrol, irradiation time: 60 s  
curing time: 72h at room temperature (23°C/50% rH)

7

Compression shear strength glass/PPA [MPa]

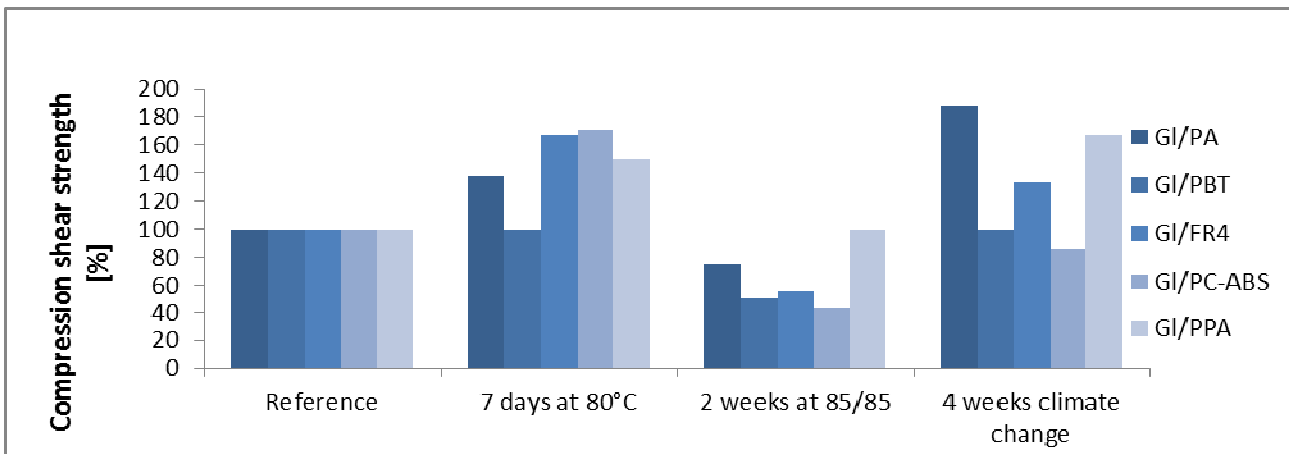
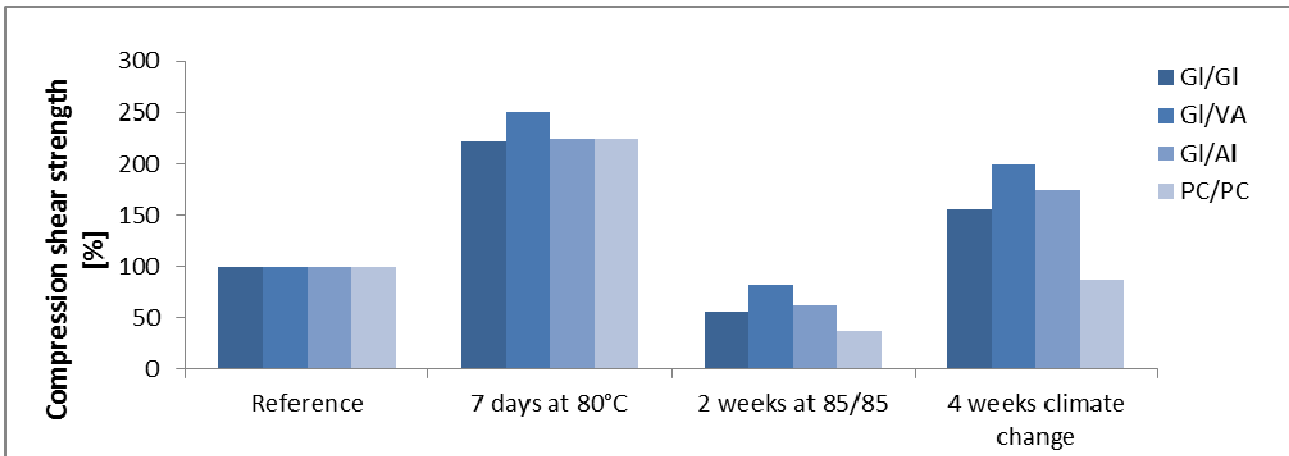
6

DELO Standard 5

LED 400nm, intensity: 60 mW/cm<sup>2</sup> DELOLUXcontrol, irradiation time: 60 s  
 curing time: 72h at room temperature (23°C/50% rH)

Compression shear strength [MPa]

after aging



Tensile strength [MPa]

8

DIN EN ISO 527

Elongation at tear [%]

350

DIN EN ISO 527

Young's modulus [MPa]

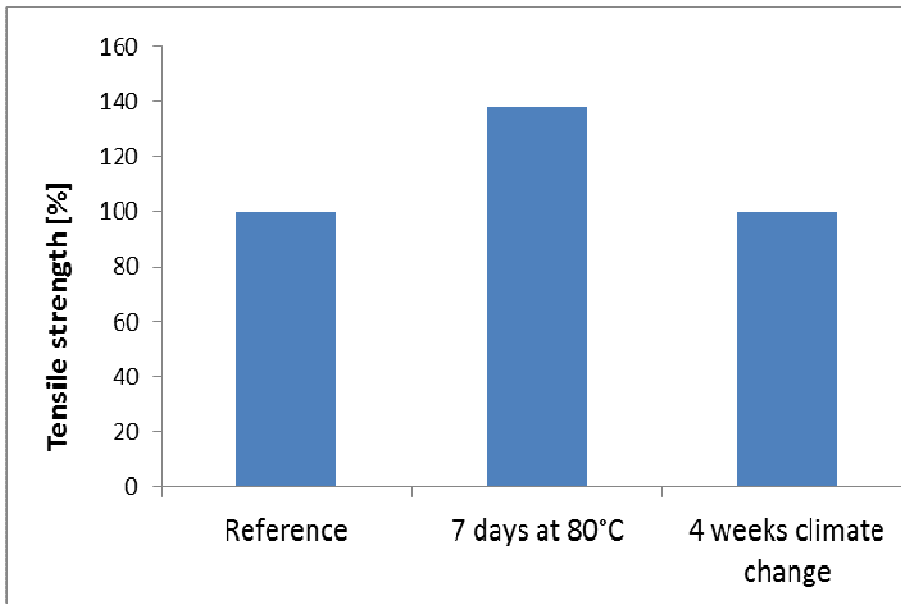
<100

DIN EN ISO 527

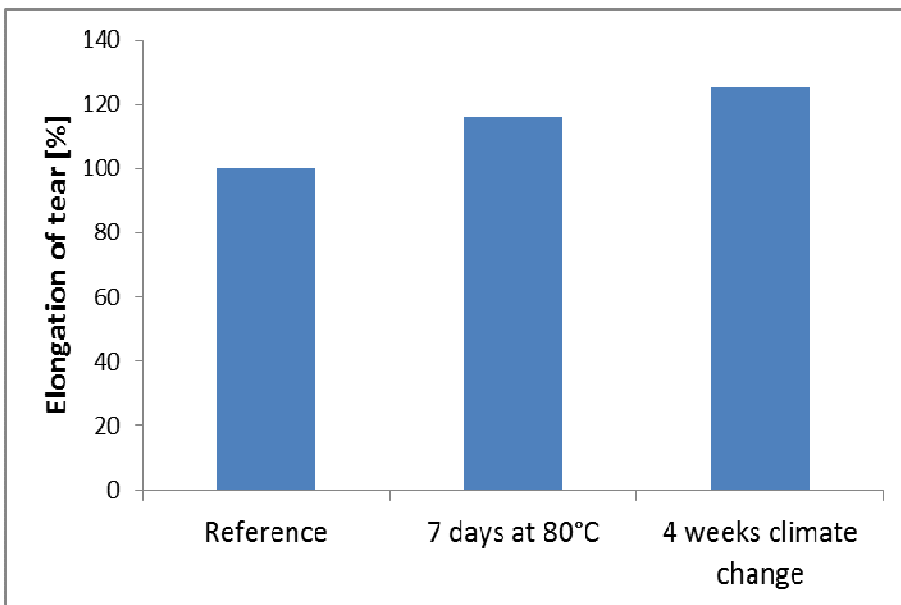
## Material properties

after aging

tensile strength after tear after temperature storage  
based on initial value at room temperature  
measured at room temperature (approx. 23 °C)  
according to DIN EN 527, test specimen type 5A, thickness 2 mm



elongation at tear after temperature storage  
based on initial value at room temperature  
measured at room temperature (approx. 23 °C)  
according to DIN EN 527, test specimen type 5A, thickness 2 mm



*Shore hardness A* 58  
according to DIN EN ISO 868

*Shore hardness D* 15  
according to DIN EN ISO 868

Glass transition temperature [°C] 66  
DMTA

Shrinkage [vol. %] 4.3  
DELO Standard 13

Water absorption [weight %] DIN EN ISO 62	2.8
peeling resistance PEEK/PEEK [N/cm] 0,05mm	4
peeling resistance PAR/PAR [N/cm] 0,1mm	10
peeling resistance PET/PET [N/cm] 0,05mm	7
peeling resistance PEN/PEN [N/cm] 0,05mm	7
Processing time at room temperature (max. 25 °C)	2 weeks
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 DUALBOND are available on: [www.DELO.de](http://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.