

### **DELO DUALBOND® OB793**

UV-/heat-curing adhesive

#### **Base**

- modified epoxy resin
- one-part, solvent free, filled, thixotropic
- UV-/heat curing

#### **Use**

- especially for a fast fixing of components with high strength after irradiation
- for the bonding of metal, glass, plastic and other materials as well as for the coating, fixing or sealing of electronic components
- 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
- halogen-free according to IEC 61249-2-21

#### **Processing**

- the adhesive is supplied ready for use; in case of refrigerated 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. 1.5 h for containers up to 30 ml; approx. 2 h for containers up to 160 ml; additional heat induction is not allowed
- the adhesive is usually applied by needle dispensing
- the adhesive can be processed well from the original container
- the bonding surfaces 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; acetone or DELOTHEN EP are recommended as cleaners

## **Curing**

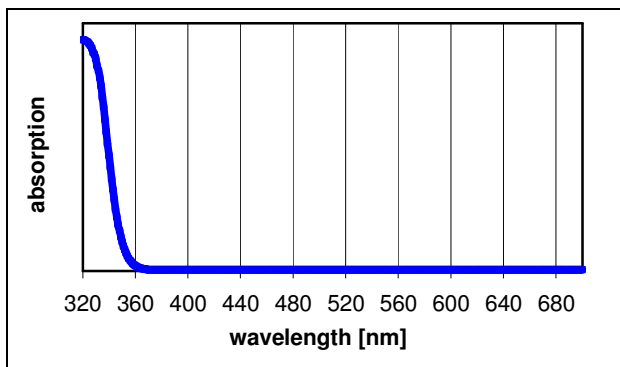
- in case of light curing dependent on material thickness and absorption, adhesive layer thickness, lamp type and distance between lamp and adhesive layer
- for the heat curing of shadowed areas a temperature of +130 °C can be preferably applied
- the minimal curing temperature is +80 °C
- the heating time of the components must be added to the curing time
- the above cure profiles are guideline recommendation. Cure conditions (time and temperature) may vary based on customers experience and their application requirements, as well as customer curing equipment, oven loading and actual oven temperatures

Lamp type	DELOLUX		
Wavelength [nm]	365	400	460
Suitability	++	-	-

- not suitable + suitable ++ especially suitable

## **Absorption spectrum**

- photoinitiation system in epoxy resin basic matrix



## **Technical data**

<i>Color</i> cured in a layer thickness of approx. 0.1 mm	black
<i>Color</i> uncured	black
Density [g/cm <sup>3</sup> ] DELO Standard 13 at room temperature (approx. +23 °C)	1.6
<i>Viscosity</i> [mPas] at 23 °C, rheometer, 10 1/s	125000
Thixotropy index at 23 °C, rheometer	5.7
Processing time at room temperature (max. 25 °C)	3 days
Minimal irradiation time [s] DELO Standard 37, DSC LED 365 nm, intensity: 200 mW/cm <sup>2</sup> ; DELOLUXcontrol, at 30 °C	6
Curing time with air convection oven [min] at +80 °C adhesive temperature	60
Curing time with air convection oven [min] at +90 °C adhesive temperature	40
Curing time with air convection oven [min] at +100 °C adhesive temperature	25

<b>Curing time with air convection oven [min]</b> at +130 °C adhesive temperature	<b>10</b>
<b>Curing time until final strength [h]</b> at room temperature (approx. 23 °C) after heat addition or irradiation	<b>24</b>
<b>Curable layer thickness [mm]</b> DELO Standard 20 curing lamp DELOLUX 20, 365nm Intensity: 150 mW/cm <sup>2</sup> DELOLUXcontrol Irradiation time: 60 s	<b>0.3</b>
<b>Compression shear strength glass/glass [MPa]</b> DELO Standard 5 LED intensity: 365 nm, 150 mW/cm <sup>2</sup> , DELOLUXcontrol, irradiation time: 10 s	<b>21</b>
<b>Compression shear strength PC/PC [MPa]</b> DELO Standard 5 curing: 20 min at 130 °C	<b>29</b>
<b><i>Compression shear strength Al/Al [MPa]</i></b> DELO Standard 5 curing: 20 min at +130 °C	<b>20</b>
<b>Tensile strength [MPa]</b> according to DIN EN ISO 527 layer thickness: 2 mm curing: combination of irradiation and heat curing + 24 h at room temperature (approx. 23 °C)	<b>49</b>
<b>Elongation at tear [%]</b> according to DIN EN ISO 527 layer thickness: 2mm curing: combination of irradiation and heat curing + 24 h at room temperature (approx. 23 °C)	<b>1</b>
<b>Young's modulus [MPa]</b> DMTA, 3 Point Bending, at room temperature (approx. +23 °C) 2nd measurement run	<b>9000</b>
<b>Shore hardness D</b> according to DIN EN ISO 868 curing: combination of irradiation and heat curing	<b>92</b>
<b><i>Glass transition temperature [°C]</i></b> DMTA, 3 Point Bending Test 2nd measurement run	<b>130</b>
<b>Coefficient of linear expansion [ppm/K]</b> TMA, in a temperature range of +30 to +45 °C	<b>54</b>
<b>Coefficient of linear expansion [ppm/K]</b> TMA, in a temperature range of +130 to +150 °C	<b>101</b>
<b>Volume shrinkage [vol. %]</b> DELO Standard 13 curing: 60 min at 80 °C	<b>1.7</b>
<b>Water absorption [weight %]</b> according to DIN EN ISO 62, 24 h at room temperature (approx. 23 °C) curing: combination of irradiation and heat curing	<b>0.07</b>
<b>Storage life at -40 °C to -18 °C</b> in unopened original container	<b>6 months</b>

## **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.