

# DELO DUALBOND® IC343

**modified polycarbamin acid derivat** | 1C | **light-fixable / heat-curing**

free of solvents | heat curing mandatory, light-fixable, low-temperature-curing, isotropic electrically conductive, thixotropic, silver-filled

### Special features of product

- compliant with RoHS Directive 2015/863/EU
- halogen-free according to IEC 61249-2-21
- compliant with limits of VOC content in adhesive acc. to GB33372-2020
- tested for biocompatibility and meets the requirements according to DIN EN ISO 10993-5: test for cytotoxicity

### Function

- electronic adhesive

### Typical area of use

- -40 - 130 °C

### Curing

Suitable lamp types LED 365 nm, LED 400 nm

Typical light fixation time

*intensity 200 mW/cm<sup>2</sup>  
LED 365 nm* 1 - 5      s

Typical curing time

*at +80 °C  
in air convection oven* 30      min

*at +90 °C  
in air convection oven* 15      min

*at +100 °C  
in air convection oven* 10      min

### Processing

Conditioning time (typical)

*when stored in cold conditions  
in containers up to 10 ml* 0.5      h

*when stored in cold conditions  
in containers up to 50 ml* 1      h

Processing time

*in standard climate +23 °C / 50 % r. h.* 72 h

Storage life in unopened original container

*at -45 °C to -15 °C* 6 month(s)

**Technical properties**

Color in cured condition in 1 mm layer thickness silver-gray

Transparency in cured condition in 1 mm layer thickness opaque

Filler particle type silver

**Parameters**

Density 3 g/cm<sup>3</sup>  
*DELO Standard 13 | liquid*

Viscosity 42000 mPa·s  
*liquid | Rheometer | Shear rate: 10 1/s | Gap: 200 µm*

Compression shear strength 12 MPa  
*DELO Standard 5 | **FR4** | **FR4** | Pretreatment: Annealing | 100 °C | 10 min*

Compression shear strength 7 MPa  
*DELO Standard 5 | **FR4** | **PBT** | Pretreatment: Annealing | 100 °C | 10 min*

Compression shear strength 4 MPa  
*DELO Standard 5 | **PBT** | **PBT** | 100 °C | 10 min*

Compression shear strength 10 MPa  
*DELO Standard 5 | **PC** | **ABS** | 100 °C | 10 min*

Compression shear strength 13 MPa  
*DELO Standard 5 | **PC** | **PC** | 100 °C | 10 min*

Compression shear strength 5 MPa  
*DELO Standard 5 | **PETP** | **PETP** | 100 °C | 10 min*

Coefficient of linear expansion 150 ppm/K  
*DELO Standard 26 | TMA | Evaluation T: 35 °C - 150 °C | 100 °C | 10 min*

Shrinkage 2.2 vol. %  
*DELO Standard 13 | 100 °C | 10 min*

Water absorption <i>by the criteria of DIN EN ISO 62   100 °C   10 min   Type of storage: Temp.   Storage temperature: at approx. +23 °C   Duration: 72 h   Type of storage: Media   Medium: Distilled water   Storage temperature: at approx. +23 °C   Duration: 24 h</i>	0.2	wt. %
Specific thermal conductivity <i>by the criteria of ASTM D 5470   100 °C   10 min</i>	1.8	W/(m·K)
Specific thermal conductivity <i>by the criteria of ASTM E 1461   100 °C   10 min</i>	1.5	W/(m·K)
Electrical resistivity <i>DELO Standard 29   100 °C   10 min</i>	0.1	mOhm·cm

**Converting table**

°F = (°C x 1.8) + 32	1 MPa = 145.04 psi
1 inch = 25.4 mm	1 GPa = 145.04 ksi
1 mil = 25.4 µm	1 cP = 1 mPa·s
1 oz = 28.3495 g	1 N = 0.225 lb

**General curing and processing information**

The curing time stated in the technical data was determined in the laboratory. It can vary depending on the adhesive quantity and component geometry and is therefore a reference value. The heating time of the components must be added to the actual curing time. It depends on component size and type of heat input. The specified curing temperature must be reached directly at the adhesive. Increasing or decreasing the curing temperature and / or irradiation intensity and / or irradiation time shortens or prolongs the curing time and can lead to changed physical properties. Only a small part of the bonding should be light-fixed as the maximum build-up of adhesion is achieved by pure heat curing. The period of time between prefixation and heat curing should not exceed 1 h at room temperature (approx. +23 °C / 50 % r.h.). The adhesive shows postcuring behavior. After heat curing at low temperatures and a short curing time, a certain level of strength is already achieved. The adhesive postcures at room temperature and achieves a level of strength corresponding to the curing temperature after approx. 24 hours. Depending on the adhesive quantity used, exothermic reaction heat is generated which can lead to overheating. In this case, a lower curing temperature is to be selected. All curing or light fixation parameters depend on material thickness and absorption, adhesive layer thickness, lamp type and distance between lamp and adhesive layer. Optional prefixation is performed with light. Heat curing is mandatory. Values measured after 24 h at approx. 23 °C / 50 % r.h., unless otherwise specified.

**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**

You can find further details in the instructions for use.

The instructions for use are available on [www.DELO-adhesives.com](http://www.DELO-adhesives.com).

We will be pleased to send them to you on demand.

### **Occupational health and safety**

See material safety data sheet.

### **Specification**

Nothing contained in this Technical Datasheet shall be interpreted as any express warranty or guarantee. This Technical Datasheet is for reference only and does not constitute a product specification. Please ask our responsible Sales Engineer for the applicable product specification which includes defined ranges. DELO is neither liable for any values and content of this Technical Datasheet nor for oral or written recommendations regarding the use, unless otherwise agreed in writing. This limitation of liability is not applicable for damages resulting from intent, gross negligence or culpable breach of cardinal obligations, nor shall it apply in case of death or personal injury or in case of liability under any applicable compulsory law.

## **CONTACT**

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