

### **DELO-DUOPOX® AD821**

Multi-purpose 2c epoxy resin, cures at room temperature, medium-viscous, unfilled

#### **Base**

- epoxy resin
- two-part, unfilled, flexible
- product free of nonylphenol

#### **Use**

- multi-purpose
- in Mechanical Engineering and Tool Construction
- in Electrical Engineering and Electronics
- good flow behaviour
- the cured product is normally used in a temperature range of -40 °C to +140 °C; depending on the application, other limits may be more reasonable
- depending on bonding and casting geometry a green colouration could occur to this product in cured state
- compliant with RoHS directive 2015/863/EU
- successfully tested according to UL 94 HB

#### **Processing**

- components A and B must be mixed well or homogenized in the mixing ratio stated below until the preparation is free of streaks
- supplied ready for use and can be processed well from the original container
- long-term heating of component A up to max. +40 °C
- 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

#### **Curing**

- proceeds at room temperature (approx. 23 °C)
- increased temperatures accelerate curing
- applying heat could change physical characteristics

#### **Technical data**

<i>Color</i>	yellowish transparent
Filler	unfilled
Mixing ratio (A : B) according to volume (A : B) according to weight	0.5 : 1 0.58 : 1
Density of component A [g/cm <sup>3</sup> ] DELO Standard 13 at room temperature (approx. 23 °C)	1.18

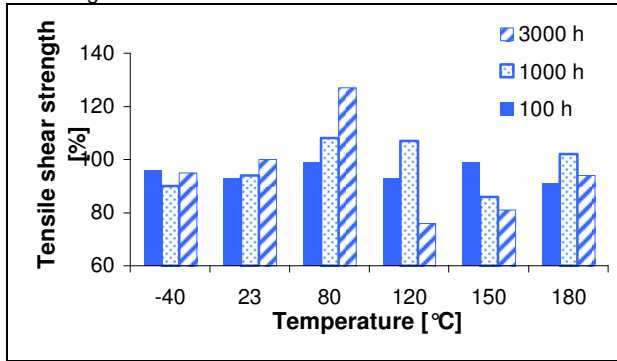
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Density of component B [g/cm <sup>3</sup> ] DELO Standard 13 at room temperature (approx. 23 °C)	1.03
<i>Viscosity of component A</i> [mPas] at 23 °C, rheometer	65000
<i>Viscosity of component B</i> [mPas] at 23 °C, rheometer	19000
Processing time in 100 g preparation [min] at room temperature (approx. 23 °C)	20
Maximal reaction temperature [°C] in 100 g preparation	69
Curing time until firmness to touch [h] tensile shear strength 1 - 2 MPa at room temperature (approx. 23 °C)	5.5
Curing time until functional strength [h] tensile shear strength > 10 MPa at room temperature (approx. 23 °C)	24
Curing time until final strength [d] at room temperature (approx. 23 °C)	7
<i>Tensile shear strength A/AI</i> [MPa] DIN EN 1465, sand-blasted component thickness: 1.6 mm after 7d at room temperature (ca. 23 °C)	14
Tensile shear strength AI/AI [MPa] DELO Standard 39, sand-blasted component thickness: 6 mm curing: 7 d at room temperature (approx. 23 °C)	13
Floating roller peel resistance St/St [N/mm] DELO Standard 38, St/St sand-blasted component thickness: 1.6 mm and 0.5 mm	4.4
Tensile strength [MPa] DIN EN ISO 527	10
Elongation at tear [%] DIN EN ISO 527	60
Young's modulus [MPa] DIN EN ISO 527	114
Shore hardness D DIN EN ISO 868 Curing: 7 d at room temperature	50
Decomposition temperature [°C] DELO Standard 36	195
Coefficient of linear expansion [ppm/K] TMA, in a temperature range of +30 to +140 °C	149
Shrinkage [vol. %] DELO Standard 13	2
Water absorption [%] according to DIN EN ISO 62, 7 d at room temperature (approx. 23°C)	0,63
Specific volume resistance [Ωcm] VDE 0303, part 30	>1xE13

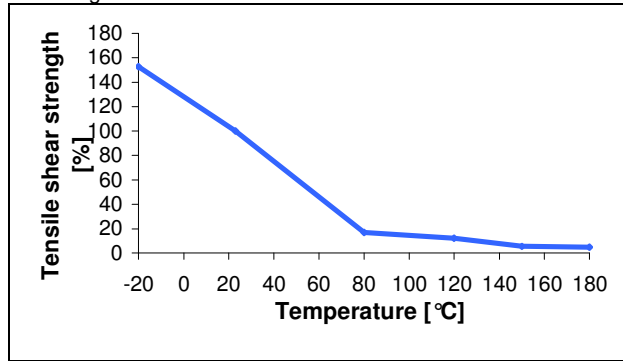
Dielectric strength [kV/mm] DIN IEC 60243-1 at 50 Hz	17
Dielectric constant RF-IV method, 1 MHz, at 25 °C +/- 3 °C	3.3
Dielectric constant RF-IV method, 10 MHz, at 25 °C +/- 3 °C	3.3
Dielectric constant RF-IV method, 100 MHz, at 25 °C +/- 3 °C	3.2
Dielectric constant RF-IV method, 1 GHz, at 25 °C +/- 3 °C	3.0
Creep resistance CTI VDE 0303, part 11, DIN EN 60112	600 M
Storage life at room temperature (max. 25 °C) in unopened original container	12 months

## Performance under temperature influence

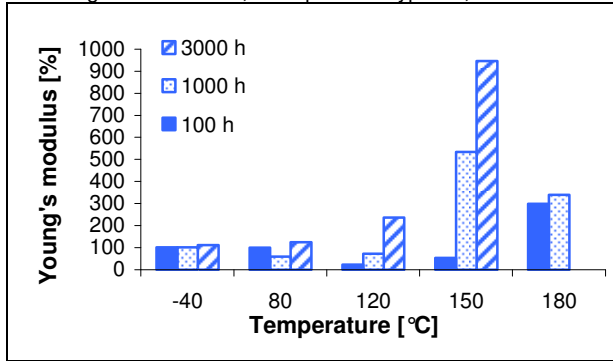
tensile shear strength Al/Al sand-blasted after temperature storage based on initial value at room temperature measured at room temperature (approx. 23 °C) according to DIN EN 1465



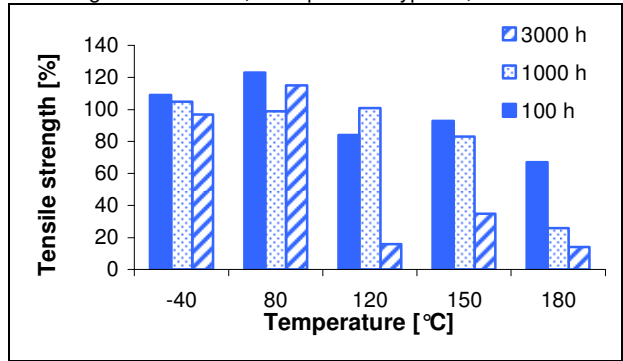
tensile shear strength Al/Al sand-blasted at temperature based on initial value at room temperature measured at determined temperature according to DIN EN 1465



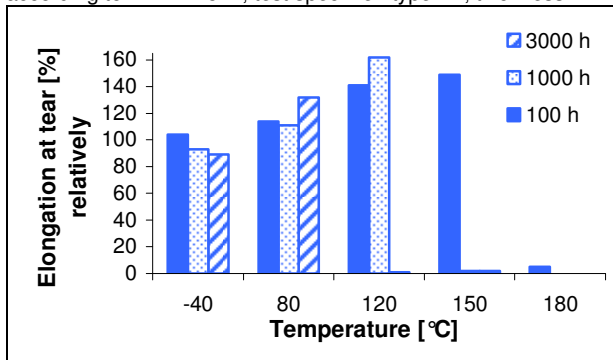
Young's modulus after temperature storage based on initial value at room temperature measured at room temperature (approx. 23 °C) according to DIN EN 527, test specimen type 1B, thickness 2 mm



tensile strength 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 1B, thickness 2 mm



elongation at tear after temperature storage based on absolute initial value at room temperature measured at room temperature (approx. 23 °C) according to DIN EN 527, test specimen type 1B, thickness 2 mm



## **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 the product for the intended purpose by considering all specific requirements. Type and 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. The data and information provided are therefore no guarantee for specific product properties or the suitability of the product for the intended 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 DELOs' General Terms of Business. Verbal side agreements are not permitted. This document is subject to change.

### **Instructions for use**

The instructions for use of DELO-DUOPOX 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.