

# DELO<sup>®</sup> MONOPOX HT2999

## modified epoxy resin | 1C | heat-curing

free of solvents | thixotropic, pasty, filled | electrically insulating, very good temperature resistance, very high temperature strength

### Special features of product

- compliant with RoHS Directive 2015/863/EU

### Function

- construction adhesive

### Typical area of use

- -55 - 220 °C
- setting of layer thickness

### Curing

Typical curing time

at +150 °C in air convection oven	10	min
at +130 °C in air convection oven	30	min

### Processing

Conditioning time (typical)

when stored in cold conditions in containers up to 310 ml	3	h
--	---	---

Processing time

in standard climate +23 °C / 50 % r. h.	7	d
---	---	---

Storage life in unopened original container

at 0 °C to +10 °C	6	month(s)
-------------------	---	----------

### Technical properties

Color in cured condition in 1 mm layer thickness	gray
Transparency in cured condition in 1 mm layer thickness	opaque
Filler particle type	spacer, minerals

Filler particle size d90 = 70 µm

**Parameters**

Density 1.58 g/cm<sup>3</sup>  
*by the criteria of DIN 66137-2 | liquid*

Tensile shear strength 16 MPa  
*by the criteria of DIN EN 1465 | **AI** | **AI** | Pretreatment: sand-blasted | 150 °C | 10 min*

Tensile shear strength 16 MPa  
*by the criteria of DIN EN 1465 | **AI** | **AI** | Pretreatment: sand-blasted | 150 °C | 10 min | Measuring temperature: 150 °C*

Tensile shear strength 13 MPa  
*by the criteria of DIN EN 1465 | **AI** | **AI** | Pretreatment: sand-blasted | 150 °C | 10 min | Measuring temperature: 180 °C*

Tensile shear strength 9 MPa  
*by the criteria of DIN EN 1465 | **AI** | **AI** | Pretreatment: sand-blasted | 150 °C | 10 min | Measuring temperature: 200 °C*

Tensile shear strength 5 MPa  
*by the criteria of DIN EN 1465 | **AI** | **AI** | Pretreatment: sand-blasted | 150 °C | 10 min | Measuring temperature: 220 °C*

Compression shear strength 52 MPa  
*DELO Standard 5 | **AI** | **AI** | Pretreatment: sand-blasted | 150 °C | 10 min*

Compression shear strength 52 MPa  
*DELO Standard 5 | **AI** | **AI** | Pretreatment: sand-blasted | 150 °C | 10 min | Type of storage: Constant climate | Storage temperature: 85 °C | Humidity: 85 % | Duration: 168 h*

Compression shear strength 50 MPa  
*DELO Standard 5 | **AI** | **AI** | Pretreatment: sand-blasted | 150 °C | 10 min | Type of storage: Temp. | Storage temperature: 180 °C | Duration: 1000 h*

Compression shear strength 45 MPa  
*DELO Standard 5 | **Stainless steel** | **Stainless steel** | Pretreatment: sand-blasted | 150 °C | 10 min*

Compression shear strength 56 MPa  
*DELO Standard 5 | **Stainless steel** | **Stainless steel** | Pretreatment: sand-blasted | 150 °C | 10 min | Type of storage: Constant climate | Storage temperature: 85 °C | Humidity: 85 % | Duration: 168 h*

Compression shear strength 50 MPa  
*DELO Standard 5 | **Stainless steel** | **Stainless steel** | Pretreatment: sand-blasted | 150 °C | 10 min | Type of storage: Temp. | Storage temperature: 180 °C | Duration: 1000 h*

Tensile strength 54 MPa  
*by the criteria of DIN EN ISO 527 | 150 °C | 10 min*

Elongation at tear <i>by the criteria of DIN EN ISO 527   150 °C   10 min</i>	1	%
Young's modulus <i>DMTA   150 °C   10 min</i>	4400	MPa
Shore hardness D <i>by the criteria of DIN EN ISO 868   150 °C   10 min</i>	88	
Glass transition temperature <i>DMTA   150 °C   10 min</i>	180	°C
Coefficient of linear expansion <i>DELO Standard 26   TMA   Evaluation T: -30 °C - 110 °C   150 °C   10 min</i>	30	ppm/K
Coefficient of linear expansion <i>DELO Standard 26   TMA   Evaluation T: 170 °C - 230 °C   150 °C   10 min</i>	135	ppm/K
Shrinkage <i>DELO Standard 13   150 °C   10 min</i>	1.1	vol. %
Water absorption <i>by the criteria of DIN EN ISO 62   Layer thickness: 4 mm   150 °C   10 min   Type of storage: Media / Medium: Distilled water   Storage temperature: at approx. +23 °C   Duration: 24 h</i>	0.15	wt. %
Decomposition temperature <i>DELO Standard 36   150 °C   10 min</i>	306	°C
Volume resistivity <i>by the criteria of DIN EN 62631-3-1   150 °C   10 min</i>	>1E15	Ohm·cm
Surface resistance <i>by the criteria of DIN EN 62631-3-2   150 °C   10 min</i>	>1E13	Ohm
Dielectric strength <i>by the criteria of DIN EN 60243-1   150 °C   40 min</i>	22	kV/mm

**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. 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. 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

DELO MONOPOX HT2999 | as of 01.02.2022 13:50 | Page 4 of 4

**DELO** Industrial Adhesives  
Headquarters

▶ Germany · Windach / Munich ... [www.DELO-adhesives.com](http://www.DELO-adhesives.com)

ADHESIVES

DISPENSING

CURING

CONSULTING

**DELO**