

DELO[®] MONOPOX HT2999

modified epoxy resin | 1C | heat-curing

free of solvents | thixotropic, high temperature resistance, high temperature strength, electrically insulating

Special features of product

- compliant with RoHS Directive 2015/863/EU

Function

- construction adhesive
- electronic adhesive

Typical area of use

- 55 - 220 °C
- setting of layer thickness

Curing

Typical curing time

<i>at +150 °C in air convection oven</i>	10	min
<i>at +130 °C in air convection oven</i>	30	min

Processing

Conditioning time (typical)

<i>when stored in cold conditions in containers up to 310 ml</i>	3	h
<i>when stored in cold conditions in containers up to 10 l</i>	12	h
<i>when stored in cold conditions in containers up to 30 l</i>	24	h

Processing time

<i>in standard climate +23 °C / 50 % r. h.</i>	7	d
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Storage life in unopened original container

<i>at 0 °C to +10 °C</i>	6	month(s)
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Technical properties

Color in cured condition in 1 mm layer thickness	gray
Transparency in cured condition in 1 mm layer thickness	opaque
Filler information	glass
Filler particle size d95	80 μm

Parameters

Density <i>by the criteria of DIN 66137-2 liquid</i>	1.58	g/cm ³
Viscosity <i>by the criteria of DIN 53019 liquid Rheometer Shear rate: 10 1/s Gap: 500 μm</i>	400000	mPa·s
Tensile shear strength <i>by the criteria of DIN EN 1465 AI AI Pretreatment: sand-blasted 150 °C 10 min</i>	16	MPa
Tensile shear strength <i>by the criteria of DIN EN 1465 AI AI Pretreatment: sand-blasted 150 °C 10 min Measuring temperature: 150 °C</i>	16	MPa
Tensile shear strength <i>by the criteria of DIN EN 1465 AI AI Pretreatment: sand-blasted 150 °C 10 min Measuring temperature: 180 °C</i>	13	MPa
Tensile shear strength <i>by the criteria of DIN EN 1465 AI AI Pretreatment: sand-blasted 150 °C 10 min Measuring temperature: 200 °C</i>	9	MPa
Tensile shear strength <i>by the criteria of DIN EN 1465 AI AI Pretreatment: sand-blasted 150 °C 10 min Measuring temperature: 220 °C</i>	5	MPa
Compression shear strength <i>DELO Standard 5 AI AI Pretreatment: sand-blasted 150 °C 10 min</i>	52	MPa
Compression shear strength <i>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</i>	52	MPa
Compression shear strength <i>DELO Standard 5 AI AI Pretreatment: sand-blasted 150 °C 10 min Type of storage: Temp. Storage temperature: 180 °C Duration: 1000 h</i>	50	MPa
Compression shear strength <i>DELO Standard 5 Stainless steel Stainless steel Pretreatment: sand-blasted 150 °C 10 min</i>	45	MPa

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 1 %

by the criteria of DIN EN ISO 527 | 150 °C | 10 min

Young's modulus 4400 MPa

DMTA | 150 °C | 10 min

Shore hardness D 88

by the criteria of DIN EN ISO 868 | 150 °C | 10 min

Glass transition temperature 180 °C

DMTA | 150 °C | 10 min

Coefficient of linear expansion 30 ppm/K

DELO Standard 26 | TMA | Evaluation T: -30 °C - 110 °C | 150 °C | 10 min

Coefficient of linear expansion 135 ppm/K

DELO Standard 26 | TMA | Evaluation T: 170 °C - 230 °C | 150 °C | 10 min

Shrinkage 1.1 vol. %

DELO Standard 13 | 150 °C | 10 min

Water absorption 0.15 wt. %

by the criteria of DIN EN ISO 62 | Layer thickness: 4 mm | 150 °C | 10 min | Type of storage: Media | Medium: Distilled water | Duration: 24 h

Decomposition temperature 306 °C

DELO Standard 36 | 150 °C | 10 min

Volume resistivity > 1E15 Ohm·cm

by the criteria of DIN EN 62631-3-1 | 150 °C | 10 min

Surface resistance > 1E13 Ohm

by the criteria of DIN EN 62631-3-2 | 150 °C | 10 min

Dielectric strength 22 kV/mm

by the criteria of DIN EN 60243-1 | 150 °C | 40 min

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.

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Instructions for use

You can find further details in the instructions for use.

The instructions for use are available on 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

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