

DELO® MONOPOX HT760

Heat-curing adhesive, for high operating temperatures

Base

- epoxy resin
- one-component, heat-curing, solvent-free, filled, thixotropic

Use

- especially for the bonding or casting of bare semiconductors and sensors
- the cured product can be used in a temperature range of -65 °C to +250 °C; depending on the application, other limits may be more reasonable
- compliant with RoHS directive 2015/863/EU

Processing

- the adhesive is supplied ready for use; in case of cool or 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. 0.5 h for containers up to 10 ml, approx. 1 h for containers up to 50 ml and approx. 3 h for containers up to 310 ml; additional heat addition is not allowed
- the adhesive can be optimally processed within the processing time (storage life at room temperature)
- the adhesive is normally applied by dispensing
- the surfaces to be bonded must be dry as well as free of dust, grease and other contaminations
- dispensing valves and product-bearing elements must be carefully cleaned directly after adhesive use; acetone is recommended as cleaner

Curing

- curing proceeds at temperatures of +125 °C to +180 °C in 20 - 90 min plus heating time of the components
- increased temperatures shorten the curing process, lower temperatures extend it, and can change the properties of the cured product
- the minimal curing temperature is +125 °C
- the maximal curing temperature is +180 °C
- the actual curing times at the respective temperatures are dependent on the heating time of the components, the heating time of the components must be added to the curing time of the adhesive
- the heating time depends on the component size and the oven type

Technical data

Color

black

Density [g/cm³]

1.7

DELO Standard 13

at room temperature (approx. +23 °C)

DELO Industrial Adhesives
DELO-Allee 1
86949 Windach · Germany
Phone +49 8193 9900-0
Fax +49 8193 9900-144
info@DELO.de · www.DELO.de

Viscosity [mPas] at 23 °C, rheometer, shear rate 10 1/s	35000
Processing time [h] at room temperature (23°C / 50% r.h.)	24
Curing time with air convection oven [min] at +150 °C adhesive temperature	20
Compression shear strength FR4/FR4 [MPa] DELO Standard 5 curing: 20 min at 150 °C after 24 h room temperature	67
Compression shear strength FR4/FR4 [MPa] DELO Standard 5 curing: 20 min at 150 °C after 16 hrs pressure cooker storage	54
Compression shear strength PPS/PPS [MPa] DELO Standard 5 curing: 20 min at 150 °C after 24 h room temperature	17
Compression shear strength PPS/PPS [MPa] DELO Standard 5 curing: 20 min at 150 °C after 16 hrs pressure cooker storage	17
Compression shear strength PPS/PPS [MPa] DELO Standard 5 curing: 20 min at 150 °C after storage 500 h at 250 °C	10
Compression shear strength ceramics/ceramics [MPa] DELO Standard 5 curing: 20 min at 150 °C after 24 h room temperature	17
Compression shear strength ceramics/ceramics [MPa] DELO Standard 5 curing: 20 min at +150 °C after storage 500 h at +250 °C	23
Compression shear strength ceramics/ceramics [MPa] DELO Standard 5 curing: 20 min at +150 °C after storage 500 h at +250 °C test temperature: +200 °C	10
Compression shear strength ceramics/ceramics [MPa] DELO Standard 5 curing: 20 min at +150 °C after storage 500 h at +250 °C test temperature: +220 °C	7
Tensile strength [MPa] according to DIN EN ISO 527 layer thickness: 2 mm curing: 20 min at +150 °C after 24 h at room temperature	53
Tensile strength [MPa] according to DIN EN ISO 527 layer thickness: 2 mm curing: 20 min at +150 °C after storage 1000 h at +250 °C	38

Tensile strength [MPa] according to DIN EN ISO 527 layer thickness: 2 mm curing: 20 min at +150 °C test temperature: +220 °C	3.5
Elongation at tear [%] according to DIN EN ISO 527 layer thickness: 2 mm curing: 20 min at +150 °C after 24 h at room temperature	0.6
Elongation at tear [%] according to DIN EN ISO 527 layer thickness: 2 mm curing: 20 min at +150 °C after storage 1000 h at +250 °C	0.4
Elongation at tear [%] according to DIN EN ISO 527 layer thickness: 2 mm curing: 20 min at +150 °C test temperature: +220 °C	0.9
Young's modulus [MPa] according to DIN EN ISO 527 layer thickness: 2 mm curing: 20 min at +150 °C after 24 h at room temperature	8700
Young's modulus [MPa] according to DIN EN ISO 527 layer thickness: 2 mm curing: 20 min at +150 °C after storage 1000 h at +250 °C	9800
Young's modulus [MPa] according to DIN EN ISO 527 layer thickness: 2 mm curing: 20 min at +150 °C test temperature: +220 °C	340
Glass transition temperature [°C] DMTA, 3 Point Bending Test curing: 20 min at +150 °C 2nd measurement run	162
Glass transition temperature [°C] TMA, DELO Standard 28 curing: 20 min at +150 °C 2nd heating process	145
Coefficient of linear expansion [ppm/K] TMA, DELO Standard 26 in a temperature range of +30 °C to +120 °C	25
Coefficient of linear expansion [ppm/K] TMA, DELO Standard 26 in a temperature range of +160 °C to +230 °C	81
Shrinkage [%] DELO Standard 13 curing: 20 min at +150 °C	0.8
Water absorption [weight %] according to DIN EN ISO 62 after 20 min at +150 °C	0.1
Decomposition temperature [°C] DELO Standard 36	308

Ion content Na+ [ppm] extraction	<10
Ion content K+ [ppm] extraction	<10
Ion content Cl- [ppm] extraction	<10
Storage life at -18°C in unopened original container	6 months

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.

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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 MONOPOX are available on: 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.