

DELO® MONOPOX GE725

Heat-curing electronic casting compound, fill

Base

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

Use

- especially for the casting of bare semiconductors and sensors
- the cured product is normally used in a temperature range of -65 °C to +180 °C; depending on the application, other limits may be more reasonable
- meets the requirements of JEDEC MSL1
- compliant with RoHS directive 2015/863/EU
- successfully tested according to UL 94 HB (by an independent test institute)

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, approx. 3 h for containers up to 310 ml and approx. 6 h for containers up to 600 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

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Density [g/cm ³] DELO standard 13	1.67
<i>Viscosity</i> [mPas] at 23 °C, rheometer, shear rate 10 1/s	6500
Processing time [h] at room temperature (23°C / 50% r.h.)	48
Processing time [h] at room temperature (23°C / 50% r.h.), cartridge size 20 oz	24
Curing time with air convection oven [min] at +150 °C	20
Curing time with air convection oven [min] at +125 °C	90
Compression shear strength Al/Al [MPa] DELO Standard 5 curing: 20 min at 150 °C	22
Compression shear strength FR4/FR4 [MPa] DELO Standard 5 curing: 20 min at 150 °C	50
Tensile strength [MPa] according to DIN EN ISO 527 layer thickness: 2 mm after 20 min at +150 °C	50
Elongation at tear [%] according to DIN EN ISO 527 layer thickness: 2 mm after 20 min at +150 °C	0.5
Young's modulus [MPa] according to DIN EN ISO 527 layer thickness: 2 mm after 20 min at +150 °C	9700
Shore hardness D according to DIN EN ISO 868 after 20 min at +150 °C	87
<i>Glass transition temperature</i> [°C] TMA, DELO Standard 28 curing: 20 min at +150 °C	178
Coefficient of linear expansion [ppm/K] TMA, DELO Standard 26 in a temperature range of +30 to +150 °C	25
Water absorption [weight %] according to DIN EN ISO 62 after 20 min at +150 °C	0.1
Decomposition temperature [°C] DELO Standard 36	323
<i>Ion content Na+</i> [ppm] extraction	<10
<i>Ion content K+</i> [ppm] extraction	<10
<i>Ion content Cl-</i> [ppm] extraction	<10

Thermal conductivity [W/(m·K)] photoflash method according to ASTM E 1461 layer thickness: 0.5 mm	0.5
Dielectric constant RF-IV method, 1 MHz, at 25 °C +/- 3 °C	3.7
Dielectric constant RF-IV method, 10 MHz, at 25 °C +/- 3 °C	3.7
Dielectric constant RF-IV method, 100 MHz, at 25 °C +/- 3 °C	3.6
Dielectric constant RF-IV method, 1 GHz, at 25 °C +/- 3 °C	3.6
Storage life at -18 °C in unopened original container	6 months
Storage life at -18 °C in unopened original container, cartridge size 20 oz	4 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.

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

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.