

DELO MONOPOX HT760

modified epoxy resin | 1C | heat-curing

free of solvents | filled, thixotropic | low CTE

Special features of product

- compliant with RoHS Directive 2015/863/EU

Function

- glob top
- electronic encapsulant
- electronic adhesive

Typical area of use

- 65 - 250 °C
- encapsulation of chip modules
- chip bonding

Curing

Recommended curing time

<i>at +150 °C</i>	20	min
<i>in air convection oven</i>		

Processing

Conditioning time (typical)

<i>stored at -18 °C</i>	0.5	h
<i>in containers up to 10 ml</i>		

<i>stored at -18 °C</i>	1	h
<i>in containers up to 50 ml</i>		

Processing time

<i>in standard climate +23 °C / 50 % r. h.</i>	24	h
--	----	---

Storage life in unopened original container

<i>at -18 °C</i>	6	month(s)
------------------	---	----------

Technical properties

Color in cured condition in 1 mm layer thickness	black
--	-------

Transparency in cured condition in 1 mm layer thickness	opaque
Filler particle type	minerals
Filler particle size	d95 = 65 µm

Parameters

Density <i>DELO Standard 13 Liquid</i>	1.70	g/cm ³
Viscosity <i>Liquid Rheometer Shear rate: 10 1/s Gap: 200 µm</i>	35000	mPa·s
Compression shear strength <i>DELO Standard 5 Ceramic Ceramic 150 °C 20 min Type of storage: Temp. Temp.: 250 °C Duration: 500 h</i>	23	MPa
Compression shear strength <i>DELO Standard 5 PPS PPS 150 °C 20 min</i>	17	MPa
Compression shear strength <i>DELO Standard 5 PPS PPS 150 °C 20 min Type of storage: Temp. Temp.: 250 °C Duration: 500 h</i>	10	MPa
Compression shear strength <i>DELO Standard 5 FR4 FR4 Pretreatment: Annealing 150 °C 20 min</i>	67	MPa
Compression shear strength <i>DELO Standard 5 FR4 FR4 Pretreatment: Annealing 150 °C 20 min Type of storage: Pressure cooker Temp.: 100 °C Duration: 16 h</i>	54	MPa
Compression shear strength <i>DELO Standard 5 Ceramic Ceramic 150 °C 20 min</i>	17	MPa
Compression shear strength <i>DELO Standard 5 Ceramic Ceramic 150 °C 20 min Type of storage: Temp. Temp.: 250 °C Duration: 500 h Measuring temperature: 200 °C</i>	10	MPa
Compression shear strength <i>DELO Standard 5 Ceramic Ceramic 150 °C 20 min Type of storage: Temp. Temp.: 250 °C Duration: 500 h Measuring temperature: 220 °C</i>	7	MPa
Compression shear strength <i>DELO Standard 5 PPS PPS 150 °C 20 min Type of storage: Pressure cooker Temp.: 100 °C Duration: 16 h</i>	17	MPa

Tensile strength 38 MPa

Based on DIN EN ISO 527 | 150 °C | 20 min | Type of storage: Temp. | Temp.: 250 °C | Duration: 1000 h

Tensile strength 53 MPa

Based on DIN EN ISO 527 | 150 °C | 20 min

Tensile strength 3.5 MPa

Based on DIN EN ISO 527 | 150 °C | 20 min | Measuring temperature: 220 °C

Elongation at tear 0.9 %

Based on DIN EN ISO 527 | 150 °C | 20 min | Measuring temperature: 220 °C

Elongation at tear 0.4 %

Based on DIN EN ISO 527 | 150 °C | 20 min | Type of storage: Temp. | Temp.: 250 °C | Duration: 1000 h

Elongation at tear 0.6 %

Based on DIN EN ISO 527 | 150 °C | 20 min

Young's modulus 340 MPa

Based on DIN EN ISO 527 | 150 °C | 20 min | Measuring temperature: 220 °C

Young's modulus 8700 MPa

Based on DIN EN ISO 527 | 150 °C | 20 min

Young's modulus 9800 MPa

Based on DIN EN ISO 527 | 150 °C | 20 min | Type of storage: Temp. | Temp.: 250 °C | Duration: 1000 h

Glass transition temperature 145 °C

DELO Standard 26 | TMA | 150 °C | 20 min

Glass transition temperature 162 °C

DMTA | 150 °C | 20 min

Coefficient of linear expansion 81 ppm/K

DELO Standard 26 | TMA | Evaluation T: 160 °C - 230 °C | 150 °C | 20 min

Coefficient of linear expansion 25 ppm/K

DELO Standard 26 | TMA | Evaluation T: 30 °C - 120 °C | 150 °C | 20 min

Shrinkage 0.8 vol. %

DELO Standard 13 | 150 °C | 20 min

Water absorption 0.1 wt. %
 Based on DIN EN ISO 62 | 150 °C | 20 min | Type of storage: Media | Medium: Distilled water | Temp.:
 at approx. +23 °C

Decomposition temperature 308 °C
 DELO Standard 36

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 oven type. The specified curing temperature must be reached directly at the adhesive. Increasing or decreasing the curing temperature and / or irradiation intensity 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

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

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