DELO® KATIOBOND® 4552

modified epoxy resin | 1C | preactivated

free of solvents | unfilled | electrically insulating, self-leveling, preactivated

Special features of product
- compliant with RoHS Directive 2015/863/EU
- passes ANSI/UL 94 HB Flame Test

Function
- electronic adhesive
- electronic encapsulant

Typical area of use
- -40 - 150 °C
- bonding of opaque components
- pin sealing

Curing

Suitable lamp types	LED 400 nm, LED 460 nm, UVA	
Typical preactivation time		
intensity 200 mW/cm² *LED 460 nm*	3	s
Typical open time		
intensity 200 mW/cm² *LED 460 nm*	16 - 21	s
Typical irradiation time		
intensity 200 mW/cm² *LED 400 nm*	40 - 60	s

Processing

Storage life in unopened original container		
at 0 °C to +25 °C	6	month(s)

Technical properties

Color in cured condition in 0.1 mm layer thickness	yellow	

Transparency in cured condition in 0.1 mm layer thickness	transparent	

Parameters

Density *Based on DIN EN ISO 2811-3*	1.1	g/cm³
Viscosity *Rheometer | Shear rate: 10 1/s*	1200	mPa·s
Maximum layer thickness that can be preactivated *DELO Standard 21 | Preactivation | 460 nm | 200 mW/cm² | 3 s | Plus | at approx. +23 °C | 24 h*	≥4	mm
Compression shear strength *DELO Standard 5 |* ***Glass*** *|* ***Glass*** *| 400 nm | 200 mW/cm² | 60 s | Plus | at approx. +23 °C | 24 h*	>20	MPa
Compression shear strength *DELO Standard 5 |* ***Glass*** *|* ***LCP GF30*** *| 400 nm | 200 mW/cm² | 60 s | Plus | at approx. +23 °C | 24 h*	7	MPa
Compression shear strength *DELO Standard 5 |* ***PC*** *|* ***PC*** *| 400 nm | 200 mW/cm² | 60 s | Plus | at approx. +23 °C | 24 h*	37	MPa
Compression shear strength *DELO Standard 5 |* ***PC*** *|* ***Al*** *| 400 nm | 200 mW/cm² | 60 s | Plus | at approx. +23 °C | 24 h*	6	MPa
Compression shear strength *DELO Standard 5 |* ***Glass*** *|* ***Al*** *| 400 nm | 200 mW/cm² | 60 s | Plus | at approx. +23 °C | 24 h*	>20	MPa
Compression shear strength *DELO Standard 5 |* ***Glass*** *|* ***PBT*** *| 400 nm | 200 mW/cm² | 60 s | Plus | at approx. +23 °C | 24 h*	15	MPa
Compression shear strength *DELO Standard 5 |* ***Glass*** *|* ***FR4*** *| 400 nm | 200 mW/cm² | 60 s | Plus | at approx. +23 °C | 24 h*	>20	MPa
Tensile strength *Based on DIN EN ISO 527 | 400 nm | 200 mW/cm² | 60 s | Plus | at approx. +23 °C | 24 h*	33	MPa
Elongation at tear *Based on DIN EN ISO 527 | 400 nm | 200 mW/cm² | 60 s | Plus | at approx. +23 °C | 24 h*	5.7	%
Young's modulus *DMTA | 400 nm | 200 mW/cm² | 60 s | Plus | at approx. +23 °C | 24 h | Type of storage: Temp. | Storage temperature: 205 °C | Duration: 30 min*	1800	MPa
Shore hardness D *Based on DIN EN ISO 868 | 400 nm | 200 mW/cm² | 60 s | Plus | at approx. +23 °C | 24 h*	67	
Glass transition temperature *DMTA | 400 nm | 200 mW/cm² | 60 s | Plus | at approx. +23 °C | 24 h | Type of storage: Temp. | Storage temperature: 205 °C | Duration: 30 min*	153	°C

Coefficient of linear expansion *DELO Standard 26 | TMA | Evaluation T: 40 °C - 55 °C | 400 nm | 200 mW/cm² | 60 s | Plus | at approx. +23 °C | 24 h*	120	ppm/K
Coefficient of linear expansion *DELO Standard 26 | TMA | Evaluation T: 130 °C - 160 °C | 400 nm | 200 mW/cm² | 60 s | Plus | at approx. +23 °C | 24 h*	173	ppm/K
Shrinkage *DELO Standard 13 | 400 nm | 200 mW/cm² | 60 s | Plus | at approx. +23 °C | 24 h*	4.3	vol. %
Water absorption *Based on DIN EN ISO 62 | 400 nm | 200 mW/cm² | 60 s | Plus | at approx. +23 °C | 24 h | Type of storage: Media | Medium: Distilled water | Duration: 24 h*	1	wt. %
Creep resistance CTI M *Based on DIN EN 60112 | 60 mW/cm² | 120 s | Plus | at approx. +23 °C | 24 h*	> 600	

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.
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.
A short irradiation time (preactivation time) results in an open time within which opaque components can be joined.
The cationic curing mechanism enables the adhesive to cure on opaque components after joining by sufficient preactivation.
All curing or light fixation parameters depend on material thickness and absorption, adhesive layer thickness, lamp type and distance between lamp and adhesive layer.
Curing until final strength proceeds within 24 hours at room temperature.
High temperatures during or after curing can lead to post-crosslinking of the adhesive which influences the physical properties of the bond.
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

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.