

DELO[®] PHOTOBOND[®] LP4224

modified acrylate | 1C | UV- / VIS-curing

free of solvents | unfilled, high water vapor barrier

Special features of product

- compliant with RoHS Directive 2015/863/EU
- tested for biocompatibility and meets the requirements according to DIN EN ISO 10993-5: test for cytotoxicity
- compliant with limits of VOC content in adhesive acc. to GB33372-2020

Typical area of use

- -40 - 120 °C
- lamination of flexible thin-film electronics

Curing

Suitable lamp types LED 365 nm, LED 400 nm

Typical irradiation time

*intensity 200 mW/cm²
LED 400 nm* 10 s

*intensity 1000 mW/cm²
LED 400 nm* 4 s

Processing

Conditioning time (typical)

*when stored in cold conditions
in containers up to 50 ml* 30 min

*when stored in cold conditions
in containers up to 1,000 ml* 4 h

Processing time

*at rt approx. +23 °C
in containers up to 1,000 ml* 28 d

Storage life in unopened original container

at 0 °C to +25 °C 6 month(s)

Technical properties

Color in uncured condition colorless

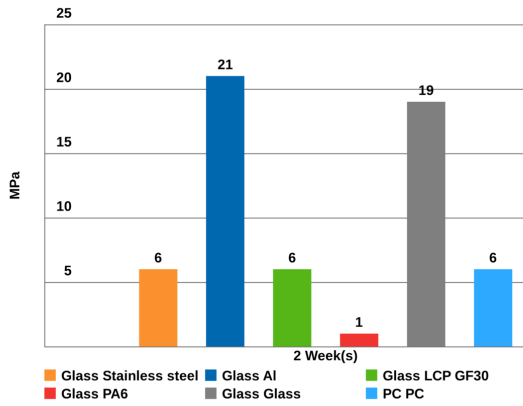
Transparency	transparent
Color in cured condition in 0.1 mm layer thickness	colorless
Color in cured condition in 1 mm layer thickness	colorless

Parameters

Density <i>DELO Standard 13 liquid</i>	1.0	g/cm ³
Viscosity <i>liquid Rheometer Shear rate: 2 1/s Gap: 500 µm</i>	1200	mPa·s
Compression shear strength <i>DELO Standard 5 Glass Al 400 nm 200 mW/cm² 30 s</i>	16	MPa
Compression shear strength <i>DELO Standard 5 Glass Stainless steel 400 nm 200 mW/cm² 30 s</i>	13	MPa
Compression shear strength <i>DELO Standard 5 Glass Glass 400 nm 200 mW/cm² 30 s</i>	16	MPa
Compression shear strength <i>DELO Standard 5 Glass LCP GF30 400 nm 200 mW/cm² 30 s</i>	11	MPa
Compression shear strength <i>DELO Standard 5 Glass PA6 400 nm 200 mW/cm² 30 s</i>	12	MPa
Compression shear strength <i>DELO Standard 5 Glass PBT 400 nm 200 mW/cm² 30 s</i>	10	MPa
Compression shear strength <i>DELO Standard 5 PC PC 400 nm 200 mW/cm² 30 s</i>	8	MPa
Compression shear strength <i>DELO Standard 5 PMMA PMMA 400 nm 200 mW/cm² 30 s</i>	10	MPa
Tensile strength <i>by the criteria of DIN EN ISO 527 400 nm 200 mW/cm² 90 s</i>	14	MPa
Elongation at tear <i>by the criteria of DIN EN ISO 527 400 nm 200 mW/cm² 90 s</i>	220	%
Young's modulus <i>by the criteria of DIN EN ISO 527 400 nm 200 mW/cm² 90 s</i>	280	MPa
Shore hardness D <i>by the criteria of DIN EN ISO 868 400 nm 200 mW/cm² 90 s</i>	52	

Glass transition temperature <i>DMTA 400 nm 200 mW/cm² 60 s</i>	74	°C
Coefficient of linear expansion <i>DELO Standard 26 TMA Evaluation T: -40 °C - 120 °C 400 nm 200 mW/cm² 60 s</i>	250	ppm/K
Coefficient of linear expansion <i>DELO Standard 26 TMA Evaluation T: 60 °C - 120 °C 400 nm 200 mW/cm² 60 s</i>	350	ppm/K
Shrinkage <i>DELO Standard 13 400 nm 200 mW/cm² 90 s</i>	6	vol. %
Water absorption <i>by the criteria of DIN EN ISO 62 400 nm 200 mW/cm² 90 s Type of storage: Media Medium: Distilled water Storage temperature: at approx. +23 °C</i>	0.1	wt. %
Permeation <i>by the criteria of ASTM E 96 Layer thickness: 300 µm 400 nm 200 mW/cm² 60 s Type of storage: Constant climate Storage temperature: 60 °C Humidity: 90 % Duration: 24 h</i>	10	(g·mm)/ (m ² ·24h)
b value <i>DELO Standard 25 Transmission Glass Glass Layer thickness: 100 µm 400 nm 200 mW/cm² 60 s</i>	0.1	
b value <i>DELO Standard 25 Transmission Glass Glass Layer thickness: 100 µm 400 nm 200 mW/cm² 60 s Type of storage: Weathering Duration: 500 h</i>	0.7	
b value <i>DELO Standard 25 Transmission Glass Glass Layer thickness: 100 µm 400 nm 200 mW/cm² 60 s Type of storage: Weathering Duration: 1000 h</i>	0.8	
Transmission <i>400 nm glass glass Layer thickness: 100 µm 400 nm 200 mW/cm² 30 s</i>	98	%
Transmission <i>425 nm glass glass Layer thickness: 100 µm 400 nm 200 mW/cm² 30 s</i>	99	%
Transmission <i>450 nm glass glass Layer thickness: 100 µm 400 nm 200 mW/cm² 30 s</i>	99	%
Transmission <i>500 nm glass glass Layer thickness: 100 µm 400 nm 200 mW/cm² 30 s</i>	99	%

Compression shear strength after +85 °C / 85 % r. h. storage, based on DELO Standard 5



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. All curing or light fixation parameters depend on material thickness and absorption, adhesive layer thickness, lamp type and distance between lamp and adhesive layer. 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

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.

CONTACT