

DELO[®]-ML DB138

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

free of solvents | very high temperature strength, dual-curing, high-strength, fast fixation

Special features of product

- compliant with RoHS Directive 2015/863/EU

Typical area of use

- 60 - 180 °C
- glass/metal bondings
- screw locking and thread sealing
- small metal areas with high fitting accuracy

Curing

Suitable lamp types LED 365 nm, LED 400 nm, UVA

Typical irradiation time

*intensity 60 mW/cm²
UVA* 8 s

Curing time

*until initial strength
at rt approx. +23 °C
with DELO-QUICK 5002 on V2A screws* 5 s

*until initial strength
at rt approx. +23 °C
anaerobic on zinc-phosphated screws* 2 - 4 min

*until final strength
at rt approx. +23 °C
anaerobic on zinc-phosphated screws* 24 h

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

in standard climate +23 °C / 50 % r. h. 28 d

Storage life in unopened original container

up to <= 600 ml
at 0 °C to +10 °C

6 month(s)

Technical properties

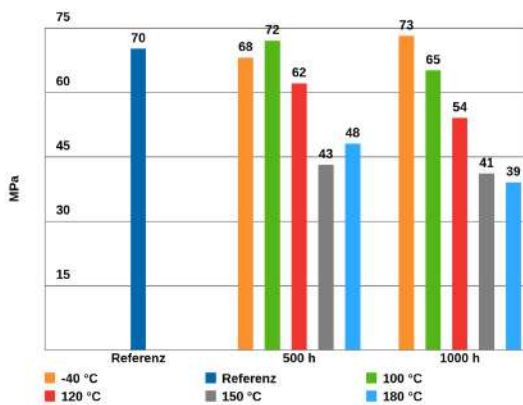
Color in uncured condition	colorless
Transparency	translucent
Color in cured condition in 0.1 mm layer thickness	yellowish
Color in cured condition in 1 mm layer thickness	yellowish
Fluorescence	fluorescent

Parameters

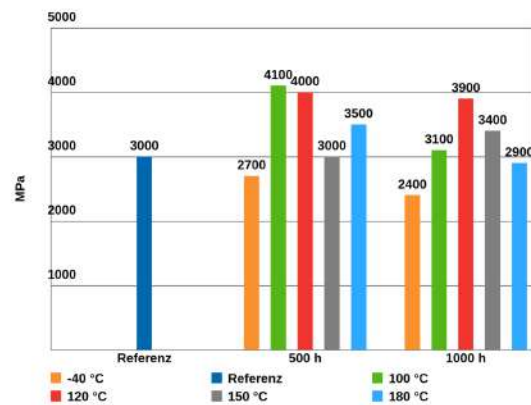
Density <i>liquid</i>	1.1	g/cm ³
Viscosity <i>liquid Viscosimeter</i>	800	mPa·s
Maximum curable layer thickness <i>DELO Standard 20 White substrate 200 mW/cm² 60 s</i>	4	mm
Off-torque <i>by the criteria of ISO 10964 Steel, zinc-phosphated Steel, zinc-phosphated liquid</i>	42	N·m
Tensile shear strength <i>by the criteria of DIN EN 1465 AI AI Pretreatment: sand-blasted liquid</i>	14	MPa
Tensile shear strength <i>by the criteria of DIN EN 1465 Steel Steel Pretreatment: sand-blasted liquid</i>	16	MPa
Compression shear strength <i>DELO Standard 5 Glass AI 400 nm 200 mW/cm² 60 s</i>	10	MPa
Compression shear strength <i>DELO Standard 5 Glass Stainless steel 400 nm 200 mW/cm² 60 s</i>	16	MPa
Compression shear strength <i>DELO Standard 5 Glass FR4 Pretreatment: Annealing 400 nm 200 mW/cm² 60 s</i>	5	MPa
Compression shear strength <i>DELO Standard 5 Glass Glass 400 nm 200 mW/cm² 60 s</i>	17	MPa

Compression shear strength <i>DELO Standard 5 Glass PA6 Pretreatment: Annealing 400 nm 200 mW/cm² 60 s</i>	5	MPa
Compression shear strength <i>DELO Standard 5 Glass PBT 400 nm 200 mW/cm² 60 s</i>	3	MPa
Compression shear strength <i>by the criteria of ISO 10123 Steel shaft Steel hub at approx. +23 °C 24 h</i>	30	MPa
Tensile strength <i>by the criteria of DIN EN ISO 527 liquid</i>	70	MPa
Elongation at tear <i>by the criteria of DIN EN ISO 527 liquid</i>	2	%
Young's modulus <i>by the criteria of DIN EN ISO 527 liquid</i>	3000	MPa
Shore hardness D <i>by the criteria of DIN EN ISO 868 400 nm 200 mW/cm² 90 s</i>	78	
Shrinkage <i>DELO Standard 13 400 nm 60 mW/cm² 90 s</i>	9.5	vol. %
Water absorption <i>DELO Standard 16 Layer thickness: 2 mm 400 nm 60 mW/cm² 90 s Type of storage: Media Medium: Distilled water Storage temperature: at approx. +23 °C Duration: 24 h</i>	0.8	wt. %

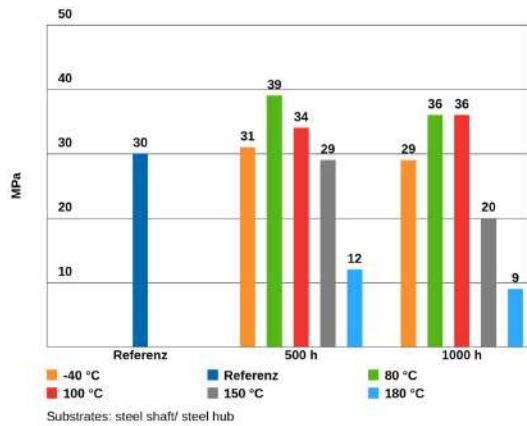
Tensile strength after thermal storage, based on DIN EN ISO 527



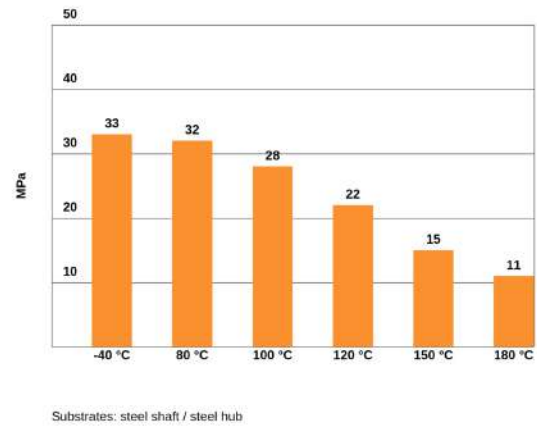
Young's modulus after thermal storage
Curing 400 nm 90 s /



Compression shear strength after thermal storage, based on ISO 10123



Compression shear strength measured at the stated temperatures



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. 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.

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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

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.

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