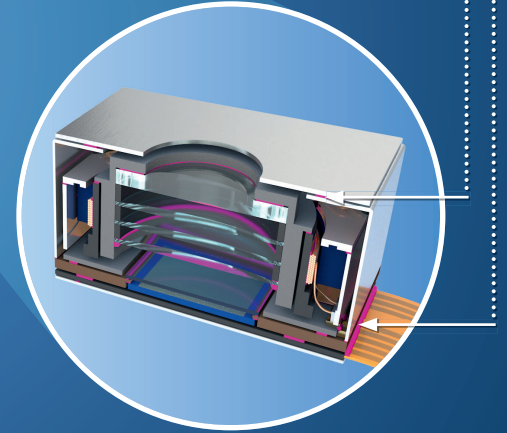


Low-tension bonding of temperature-sensitive components for compact cameras



Cooler Than Ever: Heat-Curing Adhesives

Low-tension curing at +140 °F (+60 °C)

DELO® has developed low-temperature-curing adhesives with optional light fixation for temperature-sensitive components. These products achieve full strength when cured at just +140 °F (+60 °C).

Heat-curing adhesives are used for many applications requiring high strength and permanent chemical and

environmental resistance. To achieve these properties, most adhesives must be cured at temperatures between +212 °F and +302 °F (+100 °C and +150 °C) – but not DELO®'s adhesives.

Application areas

Low-tension bonding and casting of temperature-sensitive materials in the following sectors and many more:

- Compact camera modules (CCM)
- Electronic assembly
- Mobile assembly
- Optical packaging (including infrared LEDs, image sensors)
- Wearables

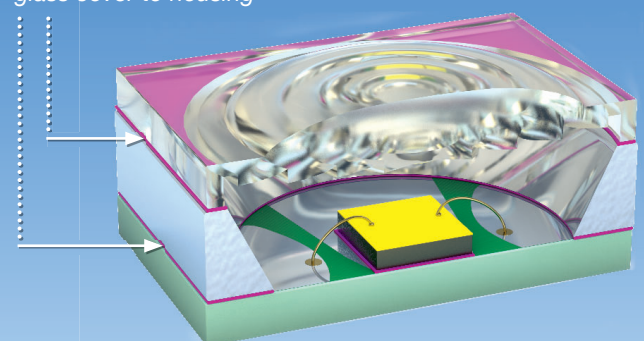
Customer's benefits

- Used in applications requiring high precision: Extremely low warpage due to low heat input
- Low thermal stress enables the use of cost-efficient substrates
- High efficiency due to low energy consumption during heat curing
- High positioning accuracy by light fixation

Product properties

- One-component, modified epoxy resins, solvent-free
- Optional pre-fixation (from an irradiation time of 0.5 s)
Low curing temperature: +140 °F (+60 °C)
- Dispensing of very fine structures with standard dispensing needles (for example, 200 µm dia.)
- Excellent adhesion to many plastics (such as ABS, LCP, PA, PBT, PMMA, PPS), metals and FR4
- High strength and permanent environmental resistance

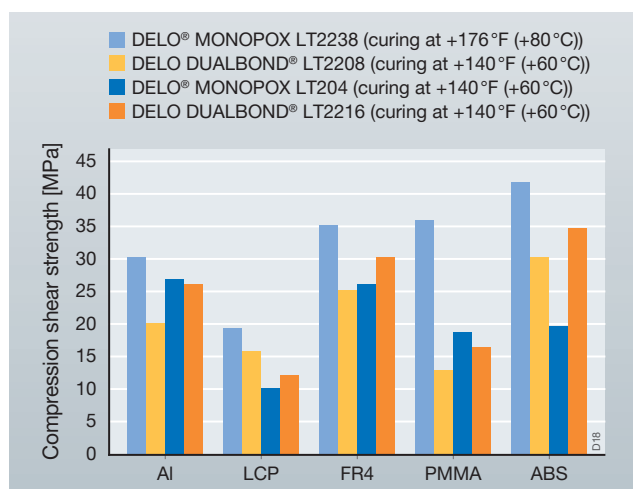
Optical packaging – Bonding of housing to PCB and glass cover to housing



	DELO® MONOPOX LT2238	DELO DUALBOND® LT2208	DELO® MONOPOX LT204	DELO DUALBOND® LT2216
Color	black	yellowish	black	beige
Viscosity	21,000 cp (= mPas)	1,500 cp (= mPas)	28,000 cp (= mPas)	14,000 cp (= mPas)
Processing time	72 h/rt	48 h/rt	72 h/rt	48 h/rt
Curing temperature	+140°F to +302°F (+60°C to +150°C)			
Curing conditions until final strength	30 min @ +140°F (+60°C)	45 min @ +140°F (+60°C)	90 min @ +140°F (+60°C)	
Tensile strength	8,120 psi (56 MPa)	3,190 psi (22 MPa)	2,900 psi (20 MPa)	3,770 psi (26 MPa)
Elongation at tear [%]	2	70	35	13.5
Young's modulus [MPa]	812.2 ksi (5,600 MPa) DMTA	26 ksi (180 MPa)	58 ksi (400 MPa)	275.6 ksi (1,900 MPa)
Shore hardness	D 84	D 69	D 77	D 75
Glass transition temperature T _g	+133°F (+56°C)	+90°F (+32°C)	+86°F (+30°C)	+100°F (+38°C)
Shrinkage [Vol. %]	4	5	4	4.9
Storage life	4 months / -0.4°F (-18°C)	6 months / -0.4°F (-18°C)	4 months / -0.4°F (-18°C)	6 months / -0.4°F (-18°C)
Container sizes	30 cc	10 cc	10 cc, 30 cc	10 cc

LT = Low Temperature

In addition, various modifications of these products are available. These have, for example, a different flexibility/strength ratio or cure even faster. Please feel free to contact our Product Management for further details and inquiries.



CONTACT

DELO Industrial Adhesives
Headquarters

► Germany · Windach/Munich ...

..... www.DELO-adhesives.com

01/19

ADHESIVES

DISPENSING

CURING

CONSULTING

DELO

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.

© DELO® – This brochure including any and all parts is protected by copyright. Any use not expressly permitted by the Urheberrechtsgesetz (German Copyright Act) shall require DELO®'s written consent. This shall apply without limitation to reproductions, duplications, disseminations, adaptations, translations and microfilms as well as to the recording, processing, duplication and/or dissemination by electronic means.