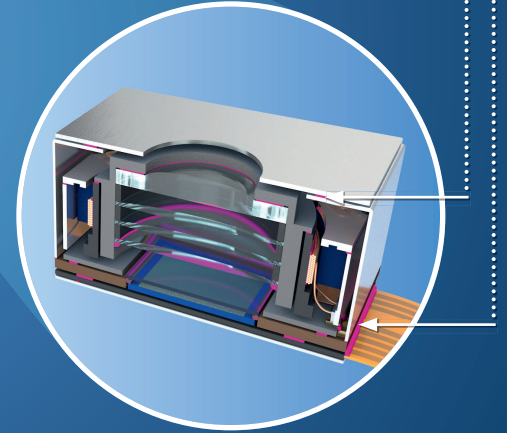


Low-tension bonding of temperature-sensitive components for compact cameras



## 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

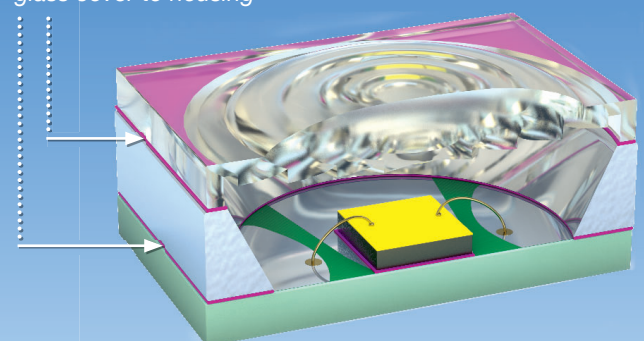
### Customer's benefits

- 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

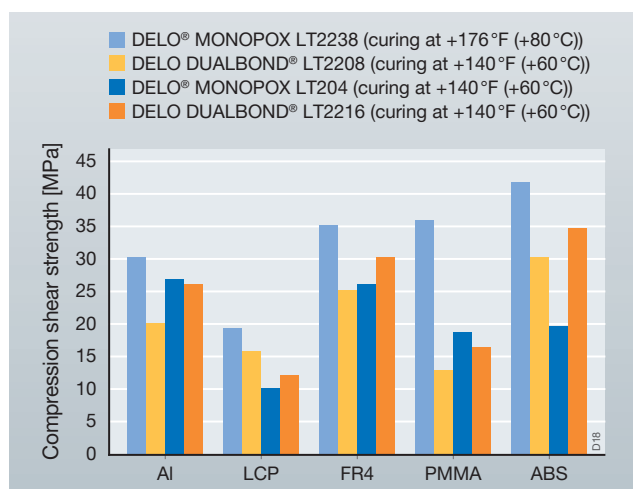
Optical packaging – Bonding of housing to PCB and glass cover to housing



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

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