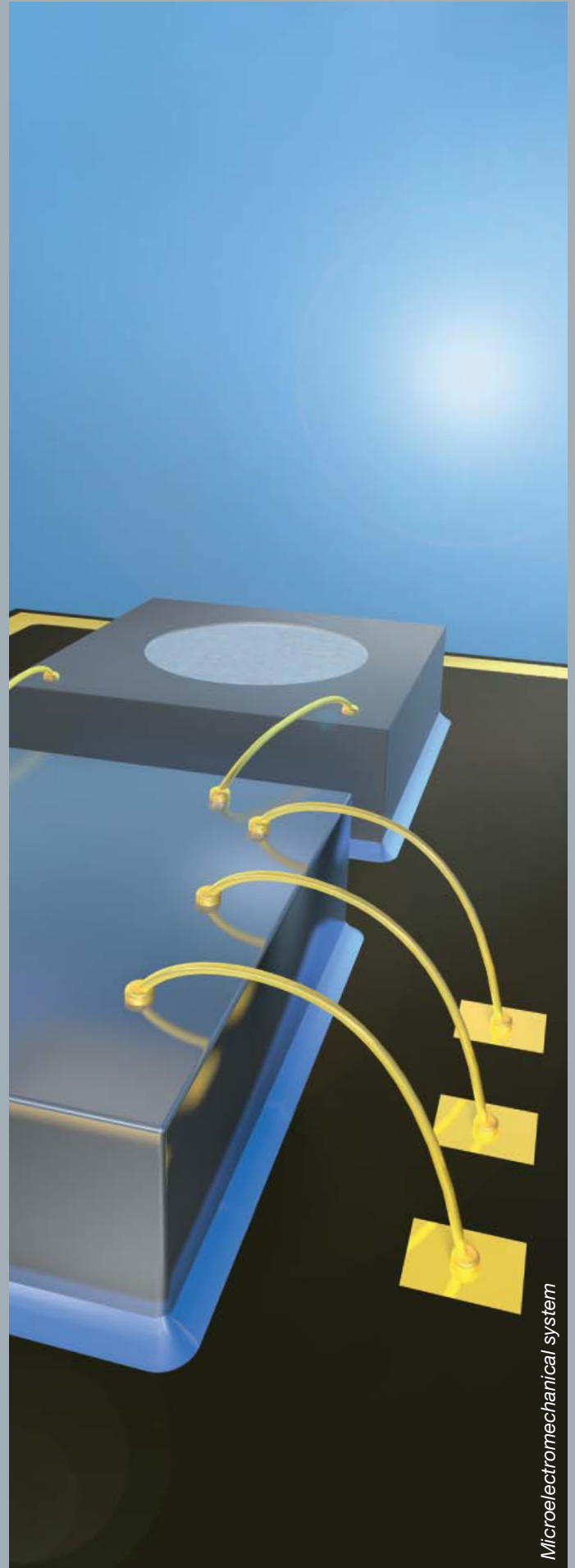




## **MEMS Packaging**

Innovative Adhesives  
and Solutions





# Cutting-edge adhesives for MEMS packaging

## Unique: High flexibility combined with high die shear strength

Microelectromechanical systems (MEMS) are found in many everyday products. These tiny components are used in many fields of applications. In particular, mobile phones contain numerous MEMS elements: Microphones for voice recognition and noise suppression, gyroscopes and accelerometers for position detection and orientation verification, pressure sensors for indoor navigation, and many more.

Also, automotive applications cannot be engineered without MEMS anymore. They are used as pressure

sensors for tire pressure monitoring (TPMS), oil pressure sensors in the gear, and acceleration sensors in airbags. Adhesives for MEMS packaging must master special challenges. Especially when bonding the MEMS chip to the substrate, high flexibility of the adhesive is required. DELO's highly flexible adhesives compensate tensions during temperature changes as a consequence of dissimilar coefficients of expansion (thermal mismatch). This provides for stable signal characteristics! Despite this high flexibility, the special MEMS adhesives give outstanding die shear strength.

## We have the adhesives you need!

### You insist on the best performance?

- DELO's adhesives provide a unique property combination of highest flexibility and die shear strength

### You expect efficient processes with short process times?

- DELO's adhesives enable fast processes thanks to extremely short curing times.

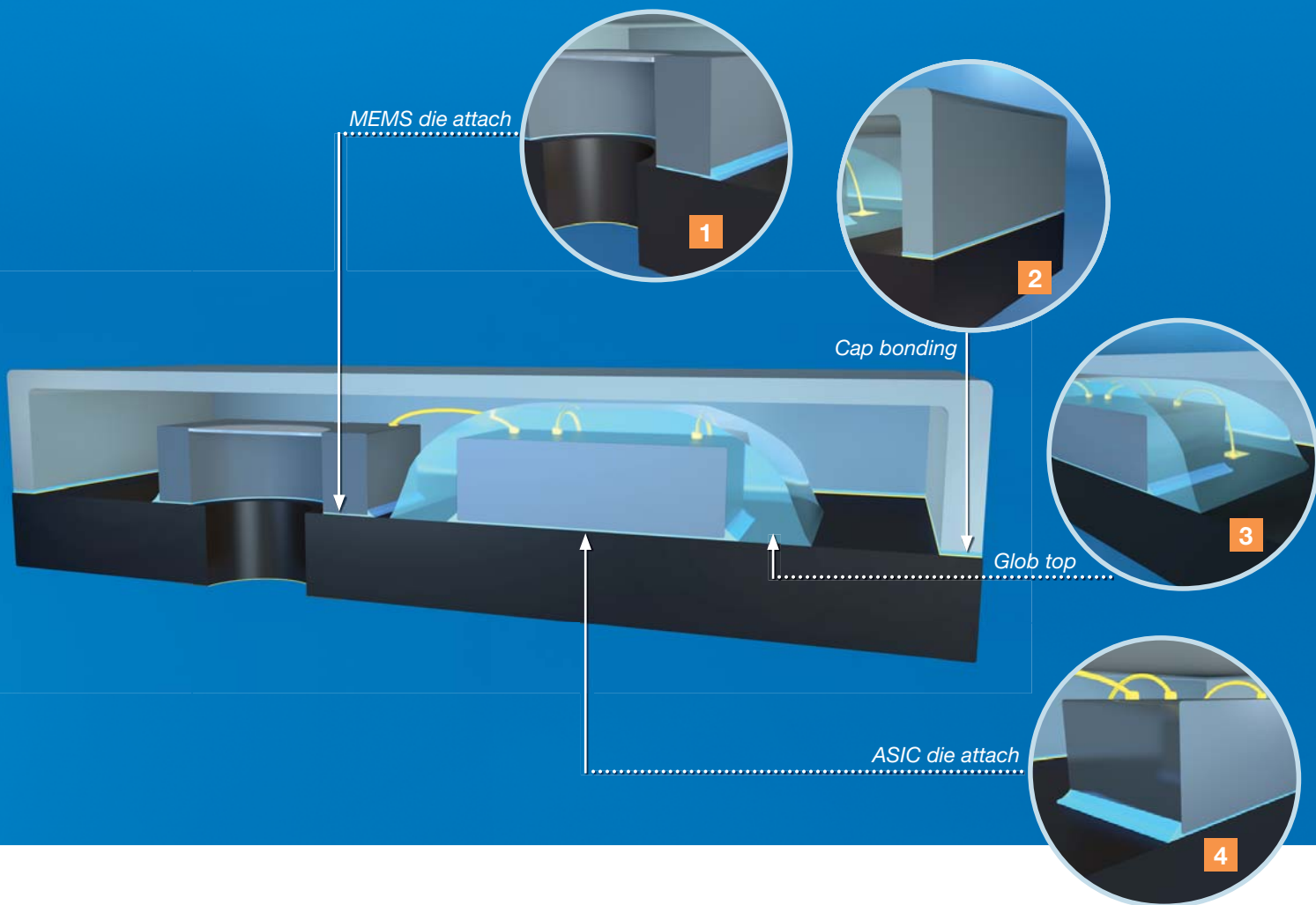
### You demand the utmost reliability for your MEMS applications?

- DELO's adhesives give excellent resistance when exposed to thermal stress and humidity, and stand out by unchanged material properties without embrittlement.

## DELO – best performance for MEMS packaging

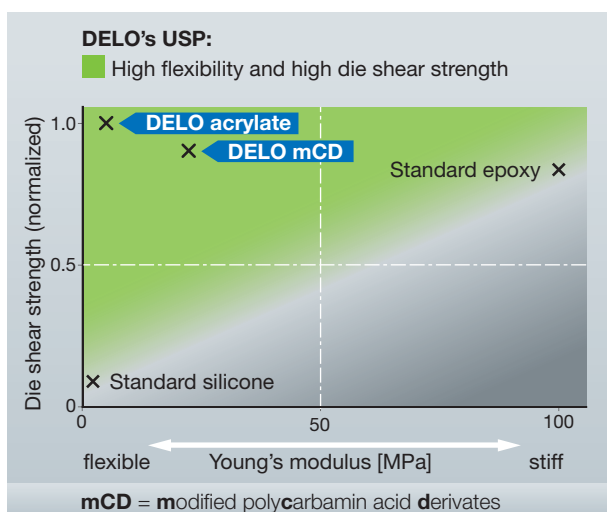


Watch the animation at [www.youtube.com/DELOadhesives](http://www.youtube.com/DELOadhesives)



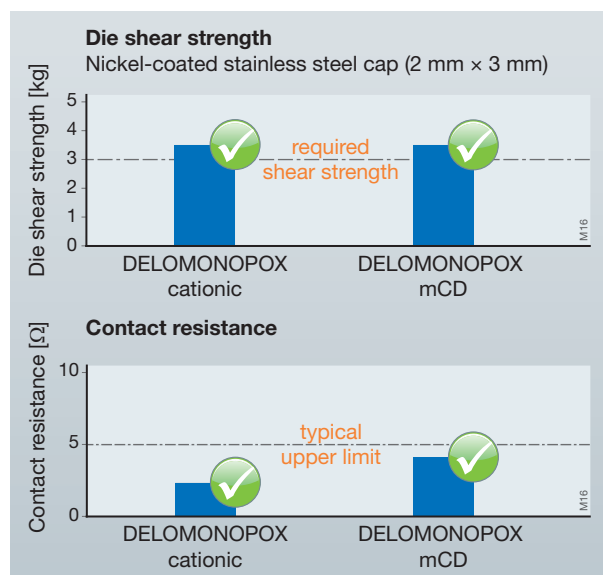
## 1 MEMS die attach

- High flexibility (Young's modulus: 5 MPa) in combination with high die shear strength
- Steady flexibility upon continuous thermal stress up to +120 °C
- Short process time at low curing temperature: 15 min @ +100 °C



## 2 Cap bonding

- Very high impact resistance
- Excellent adhesion to Au, Ni and stainless steel
- Short process time: 5 min @ +130 °C
- High electrical conductivity (shielding)



## 3 Glob top

- High flexibility
- Jettable
- Short process time at low curing temperature: 15 min @ +100 °C

## 4 ASIC die attach

- Curing within just seconds
- Low curing temperature of +80 °C
- High reliability



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Adhesives

Dispensing

Curing

Consulting

**DELO**