### DELO-ML anaerobic adhesives

<table>
<thead>
<tr>
<th>Product code</th>
<th>low-strength</th>
<th>medium-strength</th>
<th>high-strength</th>
<th>anaerobic light-curing</th>
<th>anaerobic UV-curing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S149</td>
<td>S198</td>
<td>S228</td>
<td>S249</td>
<td>S298</td>
</tr>
</tbody>
</table>

**Color-cured product**
- yellow
- clear/yellow
- clear/yellow
- clear/yellow
- clear/yellow
- colorless

**Viscosity (IP) [mPas]**
- 1000 mPas
- 0.06
- 0.13
- 0.3
- 0.13
- 0.3
- 0.25
- 0.25
- 0.25
- 0.25
- not determined

**Bridgeable gap [mm]**
- 20 – 40
- 0.08
- 0.1
- 0.04
- 0.08
- 0.1
- 0.08
- 0.08
- 0.08
- 0.08
- 0.08

**For threaded connections up to**
- all threads
- all threads
- all threads
- all threads
- all threads
- all threads
- all threads
- all threads
- all threads
- all threads

**Curing time at room temperature**
- with DELO dispensing units
- with DELO-QUICK 5002
- with DELO-QUICK 5006
- n. d.
- n. d.
- n. d.
- n. d.
- n. d.
- n. d.
- n. d.

**Minimum irradiation time [s]**
- 37
- 44
- 45
- 50
- 50
- n. d.
- 50
- n. d.
- 37
- 44
- 45
- 50
- 50

**Viscosity**
- 0.08
- 0.1
- 0.04
- 0.08
- 0.1
- 0.04
- 0.08
- 0.08
- 0.08
- 0.08
- 0.08

**Color**
- blue
- ++
- ++
- –
- n. d.
- 37
- 44
- 45
- 50
- 50
- 70
- 70
- 60
- n. d.
- 60
- 55

**Product description**
- DELO-ML are one-component, liquid solvent-free adhesives based on dimethacrylate esters.

**Standard temperature range**
- DELO-ML products are normally used in a temperature range of +20 °C to +25 °C. Therefore, the suitability of the respective product must be tested according to the application before use. You can find more details in the instructions of the products under the influence of elevated temperatures in the respective technical data sheet.

**Processing**
- DELO products can be processed directly from the bottle or container with DELO dispensing units.

**Curing**
- DELO-ML anaerobic light-curing adhesives cure at room temperature under exclusion of air (anaerobic) with simultaneous metal contact. DELO-ML anaerobic light-curing adhesives can either be cured under UV (UV-curing) or visible light (D2O – 450 nm).

**Thread connections**
- Thread connections should always be tighten within 30 seconds.
- DELO-ML anaerobic-light-curing adhesives are to be used (see also selection chart “Chemical Compatibility”).

**Storage**
- Store technical data sheet.
- The air content in the container prevents premature curing.

### Accreted curing, pretreatment of passive surfaces

<table>
<thead>
<tr>
<th>Active surfaces</th>
<th>Materials</th>
<th>Curing</th>
<th>Suitable for</th>
<th>Adhesive</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-ferrous metals, such as copper, brass, bronze, tin-lead alloys</td>
<td>High-strength, such as stainless steel, aluminium, zinc, chromium, nickel/chrome, cadmium, molybdenum, nickel: oxide layers, plastic, enamelled metals</td>
<td>Cured by or not curing</td>
<td>Curing can be accelerated using DELO-QUICK 5002 or S060</td>
<td>DELO-ML LED curing lamps are especially suitable as per the chart below</td>
<td>Not suitable</td>
</tr>
<tr>
<td>Fast</td>
<td>Fast</td>
<td>Curing</td>
<td>Curing can be accelerated using DELO-QUICK 5002 or S060</td>
<td>Fast</td>
<td>Not suitable</td>
</tr>
<tr>
<td>Fast</td>
<td>Fast</td>
<td>Curing</td>
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<td>Curing</td>
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<td>Fast</td>
<td>Not suitable</td>
</tr>
</tbody>
</table>

**Use**
- Anaerobic-curing adhesives
  - Form-closed combinations of symmetrical components such as shaft-to-hub connections, fixing of bushes, bearings and pins
  - Sealing of screws
  - Sealing of pipes, screws and flange connections
- Corrosion protection in bonding gaps

### Anaerobic-light-curing and anaerobic UV-curing adhesives
- DELO-ML anaerobic-light-curing adhesives have two independent curing mechanisms.
- Adhesion with light also makes possible the curing of adhesives in peripheral zones to allow fixing in seconds. Thus, components can be handled faster.
- If one of the components is translucent, non-metals can also be bonded.

## Further information
- You can find more details on type-specific properties in the technical data sheets and material safety data sheets.
- If bonded connections have contact with aggressive media or high temperatures, high-strength or temperature-stable DELO-ML adhesives can either be cured under exclusion of oxygen (anaerobic) or by irradiation with UV light (D2O – 450 nm).
- Adhesion can be further improved by grinding, sand blasting or pickling.

### Thread connections
- Thread connections should always be tighten within 30 seconds.
- DELO-ML anaerobic-light-curing adhesives are to be used (see also selection chart “Chemical Compatibility”).

### Storage
- Store technical data sheet.
- The air content in the container prevents premature curing.

### Curing of non-illuminated adhesives
- DELO-ML LED curing lamps are especially suitable as per the chart below.
New product property

- **Flexibleized setting**
  - DELO-ML DB133, highly flexible, impact-resistant
  - DELO-ML DB136, DELO-ML DB135, DELO-ML DB139, DELO-ML DB140, DELO-ML UB190, difficult to remove
  - DELO-ML 5298, easy to remove, run-resistant

Application examples

- **Securing of screws**
  - DELO-ML 5298, friction value similar to that of an oiled screw, removable, especially optimized for securing screws

- **Sealing of flanges and large threads**
  - DELO-ML 5298, removable, run-resistant

- **Pipe connections**
  - DELO-ML 5298, removable

- **Shaft-to-hub connections**
  - DELO-ML 5297, DELO-ML DB130, DELO-ML DB133, DELO-ML DB135, DELO-ML DB136, DELO-ML DB140, difficult to remove, high absorption of shear and transverse forces is possible

- **Grinded and galvanized surfaces**
  - DELO-ML DB130, DELO-ML DB133, DELO-ML DB135, DELO-ML DB136, DELO-ML DB140, difficult to remove, specially high viscosity

- **Fast fixing of components**
  - DELO-ML 5297, DELO-ML DB130, DELO-ML DB133, DELO-ML DB135, DELO-ML DB136, DELO-ML DB140, DELO-ML UB190, difficult to remove

- **Use in gas-operated installations**
  - DELO-ML 5297, DELO-ML DB130, DELO-ML DB133, DELO-ML DB135, DELO-ML DB136, DELO-ML DB140, DELO-ML UB190, difficult to remove

- **Use at high temperatures**
  - DELO-ML 5297, suitable for permanent use at temperatures of up to +200 °C

- **Use in hot-pressed materials**
  - DELO-ML 5297, suitable for permanent use at temperatures of up to +200 °C

- **Use in cold-pressed materials**
  - DELO-ML 5297, suitable for permanent use at temperatures of up to +200 °C

- **Use in die-cast components**
  - DELO-ML 5297, suitable for permanent use at temperatures of up to +200 °C

- **Use in metal components**
  - DELO-ML 5297, suitable for permanent use at temperatures of up to +200 °C

- **Use in wood components**
  - DELO-ML 5297, suitable for permanent use at temperatures of up to +200 °C

- **Use in plastic components**
  - DELO-ML 5297, suitable for permanent use at temperatures of up to +200 °C

- **Use in composite components**
  - DELO-ML 5297, suitable for permanent use at temperatures of up to +200 °C

- **Use in ceramic components**
  - DELO-ML 5297, suitable for permanent use at temperatures of up to +200 °C

- **Use in glass components**
  - DELO-ML 5297, suitable for permanent use at temperatures of up to +200 °C

- **Use in stone components**
  - DELO-ML 5297, suitable for permanent use at temperatures of up to +200 °C

- **Use in crystal components**
  - DELO-ML 5297, suitable for permanent use at temperatures of up to +200 °C

- **Use in rubber components**
  - DELO-ML 5297, suitable for permanent use at temperatures of up to +200 °C

- **Use in leather components**
  - DELO-ML 5297, suitable for permanent use at temperatures of up to +200 °C

- **Use in textile components**
  - DELO-ML 5297, suitable for permanent use at temperatures of up to +200 °C

- **Use in paper components**
  - DELO-ML 5297, suitable for permanent use at temperatures of up to +200 °C

- **Use in leather components**
  - DELO-ML 5297, suitable for permanent use at temperatures of up to +200 °C