

# DELO

## Instructions for Use & General Information on the Product Group

### DELO®-ML

Anaerobic curing adhesives



### Application areas

DELO-ML are liquid, one-component adhesives that cure due to the absence of oxygen with the catalytic influence of metal ions. They are especially suitable for the bonding of metal parts. The Dual Bonding types (DB) can additionally be cured with UV light or visible light. The flexible, tension-equalizing DB types are also suitable for metal-to-glass or certain metal-to-plastic bondings. All DELO-ML adhesives can be accelerated by increased temperature or the use of activators. The DB types can be fixed by UV light within seconds.

### **Application possibilities:**

- Form-closed connecting of axisymmetric components
- Securing of screws
- Sealing of pipe, screw and flange connections → Surface or thread sealing
- Dual-curing DELO-ML types (DB) can also be used for small pottings and encapsulations as well as certain glass and plastic bondings
- Fast component fixation by irradiating DELO-ML DB adhesives or by using an activator for all DELO-ML types

### **Colour differentiation**

The various DELO-ML types differ in color:

- Medium-strength: blue
- High-strength: green
- Dual-curing (anaerobic and UV- or light-curing): yellowish transparent

### **Preparation of the components to be bonded**

The contact surfaces must be dry, free of oil, grease and other contaminations in order to achieve optimal bond strength. We provide our DELOTHEN cleaners. When using cleaning agents, please note our indications for substances compatible with the specific adhesive. You can find more details in the technical information about cleaning agents.

After cleaning, adhesion to the component can be further improved by surface pretreatment. You can find further information in the written information on surface pretreatment.

The suitability and strength of the adhesive must be verified on original components under the application-specific conditions. After customer-specific tests, DELO-ML 5327 can also be used on slightly oily surfaces.

### **Preparation of the adhesive**

The products are usually supplied ready for use. In case of cool storage, it must be ensured that the containers are conditioned to room temperature (+18 to +25°C) before use to prevent condensation during adhesive application. Heat addition is not permitted. The conditioning time of containers up to 50 ml is approx. 0.5 h. The conditioning time of containers up to 1,000 ml is approx. 4 h. You can find detailed, product-specific information on adhesive preparation in the specific Technical Data Sheet.

## Processing

Depending on the scope of delivery, the adhesives can be processed manually directly from the container or by means of DELO dispensing units (such as pinch valve).

Dispensing valves and product-guiding components must be thoroughly cleaned directly before use of the adhesives. Residues of other products must be removed without leaving any residues. Materials suitable for product-guiding components e.g. dispensing valves, product hoses and fittings include PE, HDPE, PP and PTFE, which are sufficiently resistant to chemicals and are completely opaque when using the dual-curing DELO-ML products. When using other materials, their compatibility must be checked in advance. It is not recommended to use PU or metal. This is how unintentional curing in the system can be prevented. In addition, it must be kept in mind that anaerobic products may also cure in the system during production downtimes (exclusion of oxygen).

The adhesive is mostly applied to only one component to be bonded. However, it is also possible to apply the adhesive to both components. It must be ensured that the complete gap is completely filled with DELO-ML over the entire bonding area. This is how trapped air, which can prevent complete curing, is avoided. For securing screws and for sealings, the adhesive is to be applied onto all turns of the thread which are in mesh after assembly. For blind holes, enough adhesive must be dispensed to the bottom of the borehole so that air in the borehole can escape. During assembly, the adhesive spreads inside the complete gap as a consequence of the radial and axial movement of the screw or the bolt. When applying an adhesive bead for subsequent spreading on the surface through the joining pressure, an “open” bead must be ensured. That is to say that the bead must be dispensed in such a way that the adhesive presses the air outwards, and the air is not trapped.

You can find detailed, product-specific information on the processing of the specific product in the corresponding Technical Data Sheet.

## Activators

DELO-QUICK is used to accelerate curing of DELO-ML on metal and passive metal surfaces (zinc-plated, chrome-plated, cadmium-plated, etc.), as well as for curing on certain plastic types.

Solvent-containing DELO-QUICK activators	Solvent-free DELO-QUICK activators
<ol style="list-style-type: none"> <li>1. Apply DELO-QUICK to one surface</li> <li>2. Let it evaporate</li> <li>3. Apply DELO-ML to the other surface</li> <li>4. Join</li> </ol>	<ol style="list-style-type: none"> <li>5. Apply DELO-QUICK to one surface</li> <li>6. Apply DELO-ML to the other surface</li> <li>7. Join wet-in-wet</li> </ol>

Curing can also be accelerated by brushing the components with a brass or copper brush. You can find detailed, product-specific information in the specific Technical Data Sheet.

## Curing

Curing proceeds by exclusion of oxygen and under the catalytic effects of metal ions. It can be accelerated through heat and/or DELO-QUICK for DELO-ML. Dual-curing products can be cured independently of each other both anaerobically and by light of the suitable wavelength and intensity.

You can find detailed, product-specific information on the curing of each specific product in the corresponding Technical Data Sheet.

## Instructions and advice for occupational health and safety

See Material Safety Data Sheet.

## Storage

In unopened original container. Cool storage is recommendable.

Storage life: see Technical Data Sheet.

# CONTACT

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