DELO

Instructions for Use &
General Information
on the Product Group

DELO® DUALBOND®

Light- and heat-curing acrylates

Areas of use

Bonding, coating, fixing and sealing in the following industries

- Electronics
- Electrical engineering
- Microelectronics
- Optics
- Precision engineering

Preparation of the components to be bonded

The contact surfaces must be free of oil, grease, dust and other contaminations in order to achieve optimal bond strength.

You can clean the components to be joined with standard isopropanol.

When using other 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 can be further improved by surface pretreatment.

Preparation of the adhesive

The products are usually supplied ready for use.

Cold storage

Condition the containers to room temperature before use.

The conditioning times depend on the container size and the storage time.

Prevent condensation on the substrate. If necessary, allow condensation to evaporate completely before applying the adhesive.

Conditioning time		
Container size	**Temperature**	**Conditioning time**
< 50 ml	+64.4 °F to max. +77 °F (+18 °C to max. +25 °C) *Heat addition is not permitted.*	30 min
< 1 kg	+64.4 °F to max. +77 °F (+18 °C to max. +25 °C) *Heat addition is not permitted.*	approx. 4 h

Exceptional storage at room temperature or exceeding the processing time may cause the adhesive to cure in the cartridge, especially in bottles ≥ 600 ml.

Instructions regarding the processing times at room temperature of the specific containers can be found in the Technical Data Sheet. If you have any questions, please ask your DELO contact.

General processing instructions

Depending on the delivery form, you can process the products manually directly from the container or with the support of equipment.

Process DELO® DUALBOND® products at temperatures from +64.4 °F to +77 °F (+18 °C to +25 °C) and a relative humidity from 20 % to 70 %.

Prevention of bubble formation

- Dispensing preferably from the original container with a mechanical cartridge extrusion device or
- Pressing out with compressed air
  Disconnect the container from the compressed air supply during downtimes.

Containers

Protect adhesive containers and dispensing tips from light or shield them.

When exchanging the container, no scattered light may reach the inside of the container. Even scattered light may trigger the curing reaction.

Seal containers when not in use.

Product-carrying parts (e. g. dispensing valves and product hoses)

The materials used must be sufficiently chemically resistant and completely opaque.

Suitable materials:

- Stainless steel
- Polyethylene (PE, HDPE)
- Polypropylene (PP)
- Teflon (PTFE)

Check the compatibility before using other materials.

Unsuitable materials:

- Polyurethane (PU)
- Ignoble metals, such as Zn, Ni and Cu
- Ignoble Fe (e. g. cast iron)

Rinse and clean tanks, valves and hoses thoroughly before use

If you change the product, replace the product hoses. If product hoses are cleaned, the dispensing medium may be contaminated with solvent.

If there is cured adhesive in the dispensing system, replace or clean the affected components.

Processes

Join and, if necessary, fix the components quickly after applying the adhesive.

Cure the components directly after adhesive application and joining. Avoid long waiting times until curing.

Preparation / pretreatment → Application → Joining → Curing

Production flow for bonding components:

1. Preparation/pretreatment of the components
2. Application of the adhesive to one component
3. Joining
4. Curing by irradiation with UV and visible light (e. g., in case of a translucent component, the complete adhesive area must be irradiated) and / or heat addition You can find information in the specific Technical Data Sheet. Adhesive in the visible area should preferably be cured via the light curing mechanism.

Preparation/pretreatment → Application → Joining → Irradiation → Curing

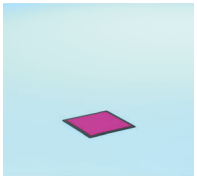
Production flow for bonding components with precuring:

1. Preparation/pretreatment of the components
2. Application of the adhesive to one component
3. Joining
4. Irradiation with a suitable wavelength
5. Curing by heat addition

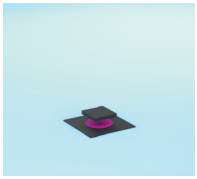
Preparation / pretreatment → Application → Curing

Production flow for coatings:

1. Preparation / pretreatment of the components to be casted
2. Application of the adhesive
3. Curing with a suitable wavelength and / or by heat input



Dispensing



Joining

Light curing

Complete curing of shadowed areas by heat

General curing instructions

DELO® DUALBOND® products can be irradiated in a wavelength range from 315 nm to 450 nm.

Recommended wavelength ranges

- UVA-curing products: 315 to 420 nm
- VIS-curing products: 380 to 450 nm

You can find the suitable wavelength for a product in the respective technical data sheet.

Further details about adhesive irradiation can be found in the Technical Information “10 Rules of Light Curing”.

The adhesive can be cured by both heat and light. Adhesive that has not been reached by light can be completely cured by subsequent heat input.

Complete curing can only be achieved if the complete adhesive volume is reached by light of the suitable wavelength and sufficient intensity.

The intensity of the light source decreases with the penetration depth of the adhesive.

The maximum layer thickness that can be cured must be determined for the intended application task and is normally between 2 and 4 mm.

The curing time depends on product and lamp (see technical data sheets). The curing speed of the respective products can be varied through the parameters lamp type, lamp intensity, lamp distance and irradiation time.

The heating time of the components must be added to the curing time. The heating time should not exceed approx. 15 minutes. Heating can proceed in air convection ovens, with IR transmitters, or with other suitable heat sources.

Instructions and advice for occupational health and safety

See Material Safety Data Sheet

Skin and eyes must be protected against UV light or glare of the lamp. It is recommended to shield the lamp with a suitable, yellowish colored plastic (e. g. polymethyl methacrylate or polycarbonate) or smoked glass and colored UV safety glasses (according to DIN EN 166 and DIN EN 170; protection level 6) for eye protection. Sufficient ventilation must be ensured during processing.

Storage

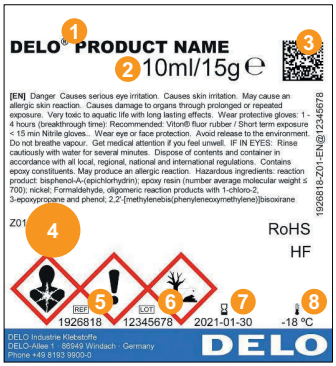
After delivery, store the product in the unopened, opaque original container as described in the Technical Data Sheet.

Storage life: see Technical Data Sheet for storage in unopened original container. The storage temperatures specified in the technical data sheet are binding. Maintain them in any case!

The container should not be exposed to direct solar radiation. Due to heat development, this may lead to an unwanted reactivity reduction or the adhesive may even cure.

Label

Typical design of a GHS label at DELO. Depending on the container size, the design and content of the label may vary.



1. Product name
2. Container content (volume/weight)
3. Datamatrix
   Extended article number@Batch@Expiry date@Product name
   (1926818-Z01-EN@12345678@2021-01-30@DELO PRODUCT NAME)
4. GHS labeling
5. Article number
6. Batch number
7. Expiry date
8. Storage temperature

CONTACT

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