

Instructions for Use & General Information on the Product Group

DELO® PHOTOBOND®

UV-curing and light-curing acrylates



Areas of use

Bonding, coating, fixing and sealing in the following industries

- Electronics
- Electrical engineering
- Microelectronics
- Medical technology
- Optics/optoelectronics
- Precision engineering
- Jewelry and furniture industry
- Glass processing industry

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
up to 30 g	+18 °C to max. +25 °C <i>Heat addition is not permitted.</i>	approx. 1 h
30 g to 1 kg	+18 °C to max. +25 °C <i>Heat addition is not permitted.</i>	up to 4 h
> 1 kg	+18 °C to max. +25 °C <i>Heat addition is not permitted.</i>	overnight

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 PHOTOBOND products at temperatures from +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

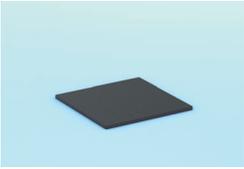
If you change the product, replace the product hoses. If product hoses are cleaned, the dispensing medium may be contaminated with solvent.

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

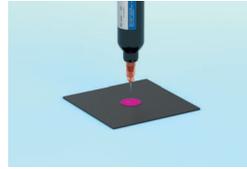
Further details about adhesive irradiation can be found in the Technical Information “10 Rules of Light Curing”.

Processes

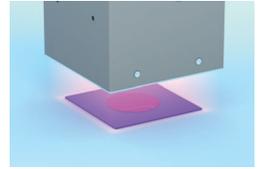
Open bonding, coating or sealing



Preparation and, if necessary, pretreatment of the components

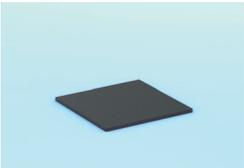


Adhesive application

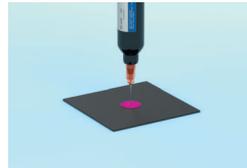


Irradiation until complete curing (the entire adhesive volume must be irradiated).

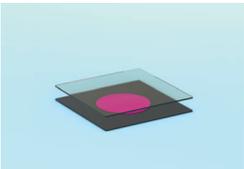
Bonding of components



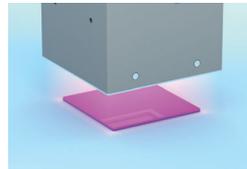
Preparation and, if necessary, pretreatment of the components



Adhesive application



Joining



Irradiation until complete curing (the entire adhesive area must be irradiated)

General curing instructions

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

Recommended wavelength ranges

- UVA-curing products: 315 to 400 nm
- VIS-curing products: 380 to 450 nm

You can find the suitable wavelength for a product in the respective Technical Data Sheet.

UVA-curing products cannot be used for many plastics since UVA light is absorbed by the plastic.

The products curing with visible light (VIS) are also suitable for translucent plastics. The components must be joined prior to irradiation.

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

The intensity decreases with increasing penetration depth.

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

During irradiation, the curing reaction proceeds very fast. After removing the light source, the reaction stops immediately. 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.

Conditions for curing

- Complete irradiation of the entire adhesive volume
- Suitable intensity
- Consistent intensity
- Monitoring of intensity (e. g. with the DELOLUXcontrol light intensity meter)
- Sufficiently long irradiation time
- Suitable adhesive layer thickness
- Open adhesive layer (potting, coating) or a translucent component

Some DELO PHOTOBOND adhesives have a tacky surface outside the bonding gap after curing. The tacky surface can be removed with isopropanol.

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

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