

Instructions for Use & General Information on the Product Group

DELO DUALBOND® Anhydrides

Light-fixable, one-component adhesives and encapsulants on the basis of anhydrides



Application areas

DELO DUALBOND products on the basis of anhydrides are predominantly used for bonding, fixing and casting in electronics, microelectronics, and electrical engineering. They are characterized by high reliability and resistance to temperatures and chemicals.

Prefixation of the adhesives and encapsulants by light enables increased bonding accuracy, defined encapsulation and easier handling of the fixed components. It can be performed by means of a light source with the wavelength range specified in the technical data sheet. DELOLUX curing lamps are recommendable. For curing until final strength, a heat curing step (from +125 °C) is mandatory. The DELO DUALBOND anhydride encapsulants can be cured by heat only, but not by light only.

It is the user's responsibility to the the suitability and strength of the adhesive on original components for the intended purpose by considering all specific requirements.

Processing

Preparation/pretreatment → Application → Joining → Prefixation → Heat curing

Pretreatment/preparation of the components to be bonded

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

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.

Possible condensation water on components must evaporate before adhesive application. Depending on the substrate, defined drying may be necessary for optimal results (e.g. when using FR4).

Preparation of the adhesive

The products are supplied ready for use. After conditioning, they can be processed by means of DELO dispensing units.

The adhesive must be conditioned to room temperature in the supplied original container without adding heat in good time before bonding (see Technical Data Sheet).

Condensation water on the adhesive and the substrate must be prevented.

The adhesive must not be frozen and thawed again.

Storage temperature	The conditioning time of containers up to 10 ml	The conditioning time of containers up to 50 ml	The conditioning time of containers up to 310 ml
Storage temperature -18°C	approx. 0.5 h	approx. 1 h	approx. 3 h
Storage temperature -40°C	approx. 1 h	approx. 2 h	approx. 4 h

Adhesive application/joining

When the adhesive has been applied, processing should continue quickly as adhesives on the basis of anhydrides are sensitive to hydrolysis in uncured condition due to their chemical nature.

Too long exposure to humidity may influence the properties that can be achieved, such as adhesion or glass transition temperature.

Larger areas and thick layers are particularly critical. Due to the large surface/volume ratio, much humidity can be absorbed within a short period of time.

Dispensing valves and product-guiding components must be thoroughly cleaned directly after use of the adhesives. Acetone is a suitable cleaner. Alcohol-containing or aqueous cleaners must not be used.

Prefixation by light

The adhesive can be prefixed by exposure to light. Complete curing by light only is not possible. Adhesive not reached by light can be completely cured by subsequent heat input. The irradiation times, curing temperatures and times depend on the product and can be found in the specific Technical Data Sheet. When choosing a curing lamp, attention must be paid to the emission spectrum. DELO offers a lamp range adapted to the adhesives. The intensity at the adhesive must be determined by means of the DELOLUXcontrol light intensity meter at regular intervals.

Curing by heat

The adhesive is only completely cured by heat. The curing temperatures and time are product-specific and can be found in the specific Technical Data Sheet. The heating time of the components must be added to the heat curing time. Heating can proceed in air convection ovens. If the temperatures used for curing are below the temperature ranges specified in the Technical Data Sheet, the product cures incompletely or does not achieve the values specified.

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

Instructions and advice for occupational health and safety

See Material Safety Data Sheet

Storage

Improper storage must be prevented as this may unpredictably change the adhesive's properties

The adhesive is to be stored in the unopened original container in a frozen ($< -18^{\circ}\text{C}$ or $< +40^{\circ}\text{C}$), light-shielded and dry place. Direct solar radiation must be prevented as this may strongly heat the container.

Details about the storage life and the recommended storage conditions of the adhesives can be found in the specific Technical Data Sheet or on the label.

Removal of the containers

After delivery, remove the package from the dry ice and condition it to the storage temperature in the unopened container for at least 4 h (see figure on the next page on the left).

Storage life and storage temperature can be found in the Technical Data Sheet.

Storage in unopened original container.

Innen / Inside

DELO

Instructions for frozen package (-18 °C)
How to handle frozen DELO adhesives after arrival

冷冻包装操作指南 (-18 °C)
如何处理冷冻包装的 DELO 胶水

1 Unpacking
Unpack the adhesive

1 打开外包装
取出装有胶水的纸箱




2 Storage
Store in a freezer at -18°C in unopened box for at least 4 hours prior to step 3

2 储存
进入第三步前，请将纸箱密封平放在 -18 °C 冷冻库中至少保存 4 小时



3 Conditioning
Allow the adhesive to adjust to room temperature prior to use

3 回温
使用前，请将胶水的温度恢复至室温 (+23 °C)



Handling of dry ice package -18 °C storage

Innen / Inside


DELO

Instructions for frozen package (-40 °C)
How to handle frozen DELO adhesives after arrival

冷冻包装操作指南 (-40 °C)
如何处理冷冻包装的 DELO 胶水


1 Unpacking
Unpack the adhesive

1 打开外包装
取出装有胶水的纸箱




2 Storage
Store in a freezer at -40°C in unopened box for at least 4 hours prior to step 3

2 储存
进入第三步前，请将纸箱密封平放在 -40 °C 冷冻库中至少保存 4 小时



3 Conditioning
Allow the adhesive to adjust to room temperature prior to use

3 回温
使用前，请将胶水的温度恢复至室温 (+23 °C)



Handling of dry ice package -40 °C storage

When removing frozen individual cartridges for conditioning, please make sure to touch them on a preferably small area as a large temperature difference between the container and the adhesive may lead to a “detachment” of the adhesive from the inner cartridge wall. Therefore, it is recommended that the containers are touched at the rear only or thermally insulating gloves are used at this point of time.

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