# Gluing

APPLICATION MANUAL

PRECIOSA

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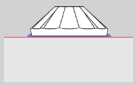
# Introduction

Preciosa crystals can be glued to a diverse range of carrier materials. In this step-by-step guide, we will help you select the appropriate type of glue for your project and show you how to securely glue stones into surface cavities and onto flat surfaces.

## I. COMPONENTS SUITABLE FOR GLUING

| COMPONENT | |  SURFACE CAVITY |  FLAT SURFACE |
|---|---|---|---|
|  | Round Stones | ✓ | |
|  | Fancy Stones | ✓ | |
|  | Nacre Pearls | ✓ | ✓ |
|  | No-Hotfix Flatback Stones | | ✓ |
|  | Stones in Settings | | ✓ |
|  | Linked Components | | ✓ |
|  | Crystal Sheet | | ✓ |

## II. CARRIER MATERIALS SUITABLE FOR GLUING

| TYPE OF CARRIER MATERIAL | EXAMPLES | RECOMMENDED TYPE OF GLUE |
|---|---|---|
| Porous material | Wood, Paper, Polystyrene | Dispersive |
| Nonporous material | Metals, Plastic, Ceramics, Stones | Two-component epoxides |
| Textile | Cotton, Viscose, Polyester, Silk, Chiffon, Velvet, Nylon | Modified silicone |
| Leather | Genuine leather, Faux/Vegan leather | Modified silicone |
| Body | Skin | Acrylates copolymer |
| | Nails | Modified acrylates |

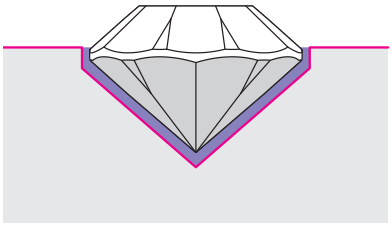
# III. CHOOSING THE RIGHT TYPE OF GLUE

Using the appropriate type and amount of glue is crucial to ensuring lasting adhesion and a clean, professional finish. Consider the following factors when purchasing glue for your project:

## A. Stone Size

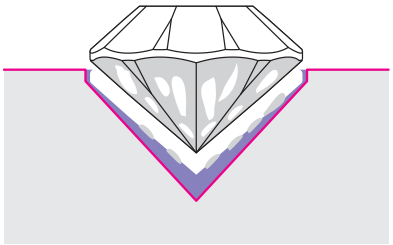
Generally, glues with higher shear strength (e.g. two-component epoxy glue) should be used for gluing smaller stones, whereas more elastic glues (e.g. modified silicones) should be used for larger sizes.

## B. Cavity Type



When selecting the glue, it is also important to consider the space for gluing according to the chosen cavity type. Silicon glues are recommended for cavities with a large gap for gluing as they can easily fill the space with minimal tension. Epoxy-ethane/polyurethane glues offer a higher shear strength and can be used in cavities with smaller spaces for gluing.

## C. Shrinkage



**To avoid shrinkage:**

- Choose the glue type carefully and test the result before continuing with your selection.
- Avoid unsuitable climate conditions during the curing process (e.g. extreme heat, high humidity, etc.)
- Be precise when preparing the cavities so as not to create too much or too little space around the stone.

## D. Carrier Material

Find the type of component(s) you intended to glue listed above the tables below, and refer to the recommended types of glue for the specific carrier material. In general, "rapid" or "fast drying" epoxy glues are not recommended.

### Round Stones, Fancy Stones, Flatback Stones and Nacre Pearls

| CARRIER MATERIAL | | TYPE OF GLUE | | | |
|---|---|---|---|---|---|
| | | Two-compo-nent epoxides | Cyanoacrylate | Modified silicone | Dispersive |
| Hard materials | Glass | ✓ | ✗ | ✓ | ✗ |
| | Metal | ✓ | ✗ | ✓ | ✗ |
| | Ceramics | ✓ | ✗ | ✓ | ✗ |
| | Stone | ✓ | ✗ | ✓ | ✗ |
| Polymer materials (glueable) | Plastics: PPMA, PC, PS, ABS, PVC | ✗ | ✓ | ✗ | ✗ |
| | TPE (Thermoplastic elastomers) | ✗ | ✓ | ✗ | ✗ |
| | Casting resin | ✓ | ✓ | ✓ | ✗ |
| Porous materials | Textiles | ✗ | ✗ | ✓ | ✓ |
| | PU foams | ✗ | ✗ | ✓ | ✓ |
| | Wood | O | ✗ | ✓ | ✓ |
| | Paper | O | ✗ | ✓ | ✓ |
| | Cork | O | ✗ | ✓ | ✓ |

### Stones in Settings , Linked Components

| CARRIER MATERIAL | TYPE OF GLUE | |
|---|---|---|
| | Two-component epoxides | Modified silicone |
| Metal | ✓ | ✓ |
| Plastics: PPMA, PC, PS, ABS, PVC | O | ✓ |
| Leather | O | ✓ |

✓ = recommended
O = possible to use but with increased caution
✗ = not recommended

## Crystal Sheet

| CARRIER MATERIAL | TYPE OF GLUE | | |
|---|---|---|---|
| | Two-component epoxides | Cyanoacrylate | Modified silicone |
| Metal | ✓ | ✓ | ✓ |
| Plastic: PVC | ✓ | ✗ | ✓ |
| Wood | ✓ | ✓ | ✓ |

NOTE:

When using a new tube of two-component epoxy glue, discard the first two centimeters as the glue at the tip will not be mixed correctly.

For curing conditions, please refer to the material data sheet.

For additional recommendations or if you need help choosing the right type of glue, please contact your Preciosa representative.

# Before You Begin

Make sure you have selected the **right glue** for the stone or setting type, assembled the necessary tools and properly cleaned and treated the carrier material.

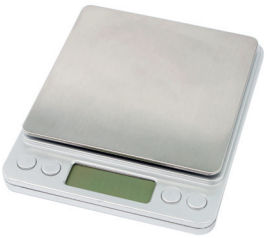
## I. TOOLS AND EQUIPMENT



Drilling machine
(CNC or column drill)



Hand drill



Precision balance



Surface-tension tester
(pen or ink)



Glue



Acetone or rubbing alcohol



Tweezers



Wax stick



Cotton swab



Dispensing syringe



Protective gloves



Protective eyewear

# II. SURFACE PRE-TREATMENT

## Cleaning

The most appropriate are materials with at least 38 mN/m. In case of lower values could help following surface pre-treatments:

| TYPES OF CLEANING | PRE-TREATMENT CLEANING METHODS |
|---|---|
| **1 Mechanical cleaning**<br>Sanding, blasting, brushing; for costume jewelry usually not needed. | • Removal of dirt, varnish residues, rust, scale.<br>• Roughening the surface. |
| **2 Washing and degreasing**<br>Make sure the cleaning solution does not contain silicon, which could negatively affect adhesion. When using solvents, it is recommended to test the durability of the cleaned surface in advance to avoid any damage. Do not use solvents containing substances with a high boiling point due to a high risk of residues. When using cleaning agents, wait a few minutes to allow them to evaporate. | • Cleaning with detergent solutions, rinsing with de-ionized water.<br>• Cleaning with isopropyl alcohol/ethanol.<br>• Cleaning with acetone (MEK/ethyl acetate)<br>• Cleaning with a cleaning solvent that does not contain substances with a high boiling point (risk of residues). |

## Ink test

Before you being, we recommend checking the surface tension by conducting an ink test, either by brush or by pen, which will determine the wetting properties of the surface.



After application, the ink stays in a compact, uninterrupted and unchanged condition on the surface or it spreads and increases the wetted area without changing its consistency – **the material is suitable for gluing.**



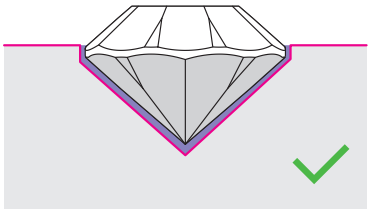
The wetted area becomes smaller and starts to break into spots and individual droplets – **the material is not suitable for gluing.**



# Application

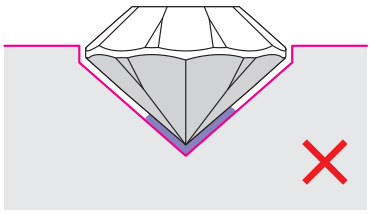
When placing the stone in the cavity or onto the flat surface, press just enough so that glue spreads to the edge of the stone but does not spread out around it.

## CORRECT surface cavity application

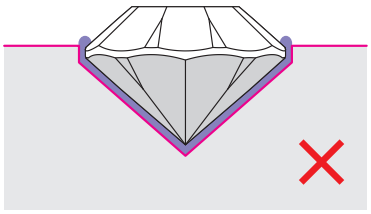


Correct amount of glue and cavity size.

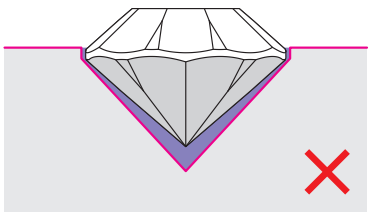
## INCORRECT surface cavity application



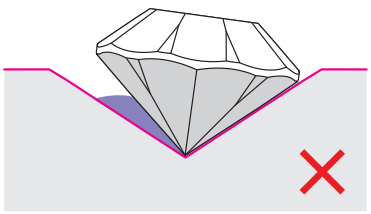
Too little glue.



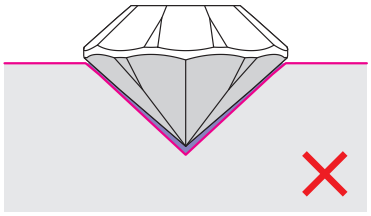
Too much glue.



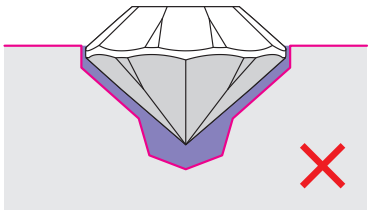
Cavity angle is too narrow.



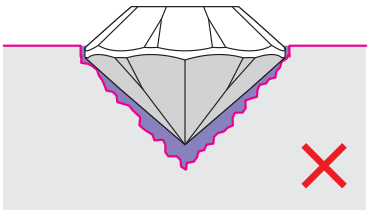
Cavity angle is too wide.



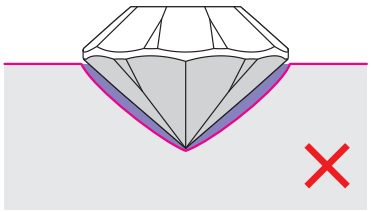
Cavity is too small.



Cavity is too large.

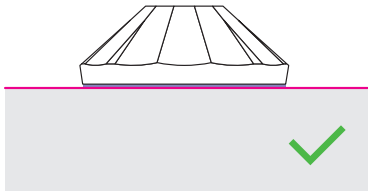


Cavity surface is uneven.



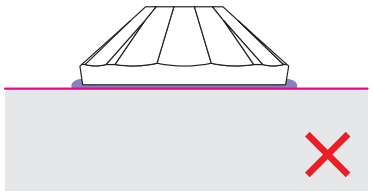
Cavity shape is incorrect.

## CORRECT flat surface application

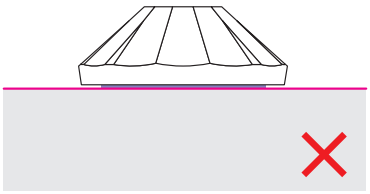


Correct amount of glue.

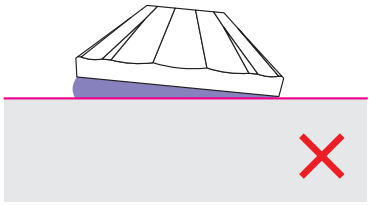
## INCORRECT flat surface application



Too much glue.



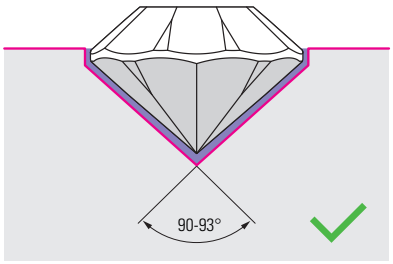
Too little glue.

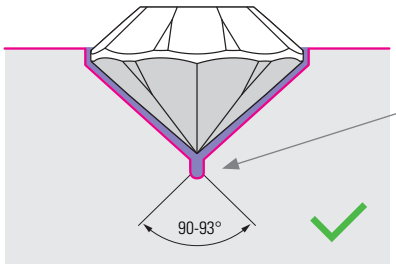


Uneven application of glue.

## GLUING INTO A SURFACE CAVITY

Surface cavities make it easier to apply round and fancy stones, and protect the stones against mechanical and chemical stress. The optimal cavity for Preciosa's signature Chaton MAXIMA should have an angle of 90°– 93°. The diameter and size of the cavity should be the same as the stone plus at least 0.1mm.




1)



Check the surface tension of the carrier material.

2)



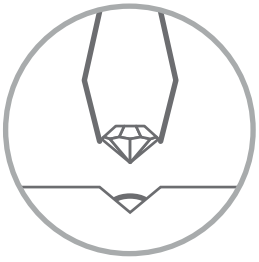
Drill the cavity and clean away any dust or debris.

3)



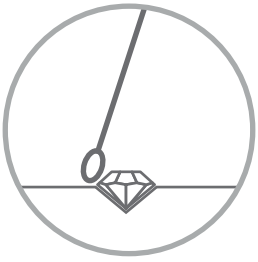
Use a syringe to fill the cavity with the appropriate amount of glue.

4)



Use tweezers or a wax stick to insert the stone and press down gently.

5)



Dip the cotton swab in acetone or rubbing alcohol and gently clean around the applied stone to prevent dirt settling while the glue is drying.

6)



Allow the glue to dry for at least 12 hours or according to the producer's recommendation.

## GLUING ONTO A FLAT SURFACE

1)



Check the surface tension of the carrier material.

2)



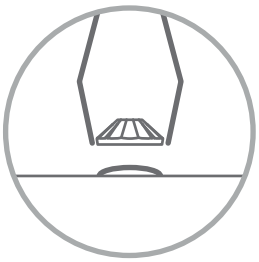
Clean and prepare the surface for application.

3)



Use a syringe to fill the cavity with the appropriate amount of glue.

4)



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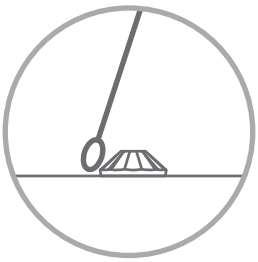

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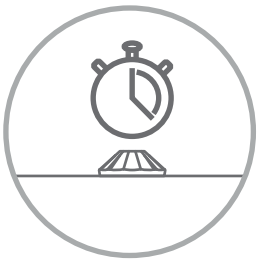

Allow the glue to dry for at least 12 hours or according to the producer's recommendation.

# Troubleshooting and Diagnostics

| PROBLEM | RECOMMENDATION |
|---|---|
| The stone appears **less shiny or has changed color.** | This is likely caused by using **too much glue**. Use a swab dipped in acetone or rubbing alcohol to clean any excess residue around the stone. |
| The stones appears **duller or darker** than surrounding stones. | This is likely caused by an **incorrectly drilled or off-center cavity.** |
| The stone **fell out of the cavity** and appears **discolored or rusty**. | This is caused by corrosion. The amount of glue was not enought a the **unfilled space is prone to corrosion**. Next time, be careful about the right dosage. |
| The stone **peeled away from the foiling, fell out of the cavity** and **appears discolored or rusty**. | Use a **glue** that is **more elastic** and does not shrink so much. Tensile stress reduces the adhesion of the mirror coating. Oxygen penetrates between the stone and the mirror coating and causes **oxidation**. |
| The stone fell out of the cavity **without foiling** - but with the mirror coating and without the platinum or the glue. | The **wrong glue** was used – try another one. |
| | An **incorrect proportion** of resin and hardener was used. Follow manufacturer´s instructions. |
| | Detergents affected the glue and/or protective coating. Use **less solvents** or a **different type of the solvent**. |
| The stone fell out of the cavity **with foiling**. **Glue is not attached** to the stone. | General glue problems. Please, follow the glue producer´s instructions and check if your **glue is in a good condition**. There also could be **to little glue or exceeded processing time** – stiff or hardened glue. |
| The stone fell out of the cavity **with foiling**. **Glue is attached** to the stone. | To **little glue was used**. Control the exact dosage. |
| | Check again the **cleaning process**. The surface was probably not treated well before gluing. Some residues may appear on the surface. |
| | Tha **cavity** has a **wrong shape** (ex. after plating). Modify the original model. |
| There is an excess of glue **before curing**. | Too much glue was used. |
| There is an excess of glue but not until **after curing**. | The finished product was put under mechanical stress or handled before the glue finished drying. |

# Care Instructions

| | | ROUND STONES | FANCY STONES | FLATBACK STONES | NACRE PEARLS |
|---|---|---|---|---|---|
| Stones with coatings – use only gentle wash cycle (30 °C). | Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended. | ● | ● | ● | ● |
| | Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended. | | | | |
| | Turn inside out and use mild laundry detergent. | | | | ● |
| | Do not wash! | | | | |
| | Do not use chlorine bleach! | ● | ● | ● | ● |
| | Turn inside out and dry at reduced temperature. | | | | |
| | Do not tumble dry! | ● | ● | ● | ● |
| | Iron inside out using a silk/polyester viscose setting and pressing cloth. | | | | |
| | Iron inside out using a wool setting. | | | ● | |
| | Do not iron! | | | | ● |
| To protect the crystals as much as possible, the use of a soft wash bag is recommended. | May be gently dry-cleaned using perchlorethylene. Turn inside out. | ● | ● | | |
| | May be gently dry-cleaned using hydrocarbon. | ● | ● | ● | |
| | Can withstand professional wet cleaning. Turn inside out. | ● | ● | ● | |
| | Do not dry clean! | ● | ● | ● | ● |

| | STONES IN SETTINGS | CRYSTAL CUPCHAIN | CRYSTAL BANDING | CRYSTAL SHEET |
|---|---|---|---|---|
| Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended. | | | | |
| Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended. | | | | ● |
| Turn inside out and use mild laundry detergent. | ● | ● | ● | |
| Do not wash! | | | | |
| Do not use chlorine bleach! | ● | ● | ● | ● |
| Turn inside out and dry at reduced temperature. | | | | |
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| Iron inside out using a silk/polyester viscose setting and pressing cloth. | ● | ● | ● | |
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To protect the crystals as much as possible, the use of a soft wash bag is recommended.

**Preciosa Components**
A Member of the Preciosa Group

A global leader in luxury goods manufactured from crystal, the Preciosa Group stands upon centuries of glassmaking tradition and innovation. From the world's smallest faceted flatback stone to our cutting-edge, bespoke lighting installations, Preciosa looks to our own unique heritage to draw inspiration for the future of responsibly crafted Bohemian crystal. Together, the Group operates regional offices across Europe, North America and Asia and melts 40 tons of glass every day.

PreciosaComponents.com