

## PL<sup>®</sup> MAX Mirror, Marble & Granite Construction Adhesive

### DESCRIPTION

LOCTITE<sup>®</sup> PL<sup>®</sup> MAX Mirror, Marble & Granite Construction Adhesive is engineered specifically for use in kitchen and bath applications. It provides superior bonding capabilities and adheres to common materials found in kitchen and bath areas.

#### Available as:

Item #	Package	Size	Color
2999463	Plastic cartridge	9 fl. oz. (266 mL)	White

### FEATURES & BENEFITS

- Long lasting adhesion in damp and humid areas
- Suitable for interior and exterior use
- Won't stain or damage surfaces when used as directed

### RECOMMENDED FOR

Bonds to most common materials found in kitchen & bath applications such as mirrors <sup>[1]</sup>, marble, granite, wood, concrete, brick, glass, ceramic, many plastics, most metals, drywall, foam insulation (EPS and XPS) and some painted/coated surfaces.

### LIMITATIONS

- Water submersion applications or constantly damp environments
- Polyethylene (PE), polypropylene (PP), polytetrafluoroethylene (PTFE), flexible/plasticized vinyl (FPVC), acrylic glass, copper, brass or bronze surfaces
- Areas of high heat, such as fireplace openings
- Certain natural stones <sup>[2]</sup> such as limestone, travertine, or sandstone
- Bituminous coated surfaces or materials
- Certain materials such as rubbers and plastics may have bonding difficulties. Test before use.
- Painted or antique mirrors
- Flexible sheet goods

### COVERAGE

#### For a 9 fl. oz. (266 mL) cartridge:

- A 1/4" (6 mm) bead extrudes approximately 28 lin. ft. (8.5 m)
- A 3/8" (9.5 mm) bead extrudes approximately 12.3 ft. (3.7 m)

### TECHNICAL DATA

Typical Uncured Physical Properties		Typical Application Properties	
<u>Color:</u>	White	<u>Application Temperature:</u>	Apply and cure above 40°F (5°C) and below 105°F (40°C)
<u>Appearance:</u>	Thick paste	<u>Odor:</u>	Alcohol
<u>Base:</u>	Silane Modified Polymer	<u>Open Time:</u>	< 10 minutes*
<u>Viscosity:</u>	300,000 – 700,000 cPs	<u>Repositioning Time:</u>	5 – 10 minutes*
<u>VOC Content:</u>	2.88% by weight      CARB 46.94 g/l                      SCAQMD	<u>Clamping Time:</u>	24 hours

<sup>1</sup> Mirror applications require a permanent bracing system such as clips or channels to be used

<sup>2</sup> Some natural stone materials may have unpredictable surface characteristics. Therefore, we recommend testing for adhesion by applying adhesive to a small area before proceeding with an entire job.



# Technical Data Sheet

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## TECHNICAL DATA

Typical Uncured Physical Properties	Typical Application Properties
<u>Shelf Life:</u> 18 months from date of manufacture (unopened)	<u>Cure Time:</u> 24 – 48 hours*
<u>Lot Code Explanation:</u> <b>YYDDD</b> YY = Last two digits of year of manufacture DDD = Day of manufacture based on 365 days in a year Example: 22248 = 248th day of 2022 = September 5, 2022	<u>Clean up:</u> Clean up uncured adhesive residue with mineral spirits. Cut or scrape away cured adhesive using a sharp-edged tool. Note this may result in damage to surfaces. Follow solvent manufacturer's precautions for using solvents.

\* At 73°F (23°C) and 50% relative humidity  
Time is dependent on temperature, humidity, porosity of substrate, and amount of adhesive applied

## Typical Cured Performance Properties

<u>Color:</u> White	<u>Service Temperature:</u> -22°F (-30°C) to 158°F (70°C)
<u>Cured form:</u> Non-flammable, hard solid	<u>Water Resistance:</u> Yes
<u>Paintable:</u> Yes, with water-based acrylic paint	

### Shear Strength, ASTM D3498:

Dry Lumber	225 psi
Wet Lumber	115 psi
Frozen Lumber	135 psi
Gap Filling	184 psi
Moisture resistance	183 psi

## DIRECTIONS

### Tools Typically Required:

Utility knife, caulking gun, plant mister bottle containing water (if bonding two non-porous surfaces).

### Safety Precautions:

Wear gloves to avoid skin contact and wash hands after use.

### Preparation:

The temperature of the bonding surfaces and working area must be between 40°F (5°C) and 105°F (40°C). For best results and smooth, fast, easy application during cold weather, store adhesive at room temperature (70° ± 5°F) 24 hours prior to use and ensure product temperature is 60°F (15°C) or higher but below 90°F (32°C). Ensure surfaces to be bonded are clean, structurally sound, and free of standing water, dust, grease, oil, and/or other contaminants. Pre-fit all materials prior to applying product and protect finished surfaces. Remove nozzle and cut nub. Screw on nozzle and cut at a 45° angle to required opening, at least ¼ inch or wider. Be very careful not to allow LOCTITE PL MAX Mirror, Marble & Granite to cure on a finished surface (removal may not be possible without surface damage).

**NOTE:** Do not use on building materials that are warped or show evidence of warping. These materials will experience bonding difficulties.

### General Application:

Apply adhesive to one of the bonding surfaces. Press surfaces firmly together within 10 minutes. Materials may be repositioned within 5 minutes after applying the adhesive. If bonding two non-porous surfaces or under very dry conditions (less than 30% relative humidity), add water in the form of a very light or atomized spray from a plant mister bottle to the extruded adhesive. The repositioning time will then be reduced to less than 5 minutes. Use mechanical support or temporary bracing for 24-48 hours depending upon project requirements while the adhesive cures. Cure time is dependent upon temperature, humidity, porosity of substrate and amount of adhesive used. Low temperature and humidity will slow cure time.

**DIRECTIONS****Application Tips:**

1. For small, relatively smooth and level surfaces use straight, parallel beads of adhesive (Fig.1)
2. For large areas parallel serpentine beads may work best, placed 6 – 8" O.C. (Fig. 2)  
**Note:** In case of two non-porous surfaces, adhesive beads must not merge or form a continuous area as air/moisture contact with applied adhesive is required for proper cure.
3. When using for exterior/outdoor applications, it is best to apply vertical beads of adhesive (from top to bottom) to help support vertical load conditions.
4. For rough and uneven surfaces using the spot/dollop method works best (Fig.3)



Fig. 1



Fig. 2

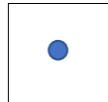
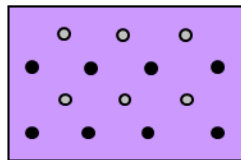


Fig. 3

**Mirror bonding:** Using a caulking gun, apply adhesive dollops to back of mirror in 2 to 3-inch (5 to 7.5-cm) diameter spots approximately 1/2" (12 mm) thick for every square foot of mirror (see Figure 4). Do not place the adhesive too close to the edge to prevent squeeze out. A permanent support system such as plastic holders or clips or mirror channels must be used to hold mirrors in place, both at the top and bottom of mirror. Heavy mirrors may require an additional support system. Place mirror in position, in supports, and carefully press into place within 20 minutes of application. The adhesive should be compressed so that it is approximately 1/8 inch (3 mm) thick. Do not attempt to remove or reposition the mirror once adhesive has started to cure. Brace top of mirror to hold in place while the adhesive cures, usually 24 hours. Mirrors should not be mounted to wallpaper, painted surfaces, plaster, natural stone, fire retardant plywood, pressure treated wood or any surface that is damaged or not structurally sound. Total time required for curing depends upon temperature, humidity, porosity of substrate and amount of air that can reach the adhesive. For non-porous surfaces longer curing time will be required. Fully sealing around the edges may extend cure times.

**Figure 4**

**SPECIAL NOTE:** Not recommended for overhead mirror installations or mirror overlays. Do not apply horizontal or continuous adhesive beads. Do not use on mirrors exhibiting damage or scratches on the mirror backing as adhesive may cause damage to reflective coating.

**Clean-up:**

Clean tools and uncured adhesive residue immediately with mineral spirits in a well-ventilated area to the outdoors. Follow solvent manufacturer's precautions for using solvents. Cured adhesive may be carefully cut or scraped away with a sharp-edged tool. Note this may result in damage to surfaces.

**STORAGE & DISPOSAL**

**NOT DAMAGED BY FREEZING.** For best results store unopened product at standard conditions which are defined as  $72 \pm 4^{\circ}\text{F}$  ( $22 \pm 2^{\circ}\text{C}$ ) and  $< 50\%$  relative humidity. Use an approved hazardous waste facility for disposal, and in accordance with local and federal regulations.

## LABEL PRECAUTIONS

### **WARNING! UNCURED ADHESIVE IRRITATES EYES, SKIN, AND RESPIRATORY TRACT**

**Warning!** Contains crystalline silica and silanes. May be harmful if inhaled or swallowed. Methanol is released during application and cure, which may affect the nervous system causing dizziness, headache, or nausea. Use in a well-ventilated area. Do not breathe vapors. Avoid eye and skin contact. Prolonged or repeated skin contact with uncured adhesive may cause irritation. Wear gloves and safety glasses when applying product. Remove contact lenses before using adhesive. Wash hands after using.

**FIRST AID:** For eye contact flush with water for 15 minutes. Call a physician if irritation develops and persists. For skin contact, wash thoroughly with soap and water. If affected by inhalation, remove to fresh air and get medical attention. If ingested, do not induce vomiting; call a physician or Poison Control Center immediately.

**DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.**



**WARNING: Risk of Cancer and Reproductive Harm – [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)**

**Refer to the Safety Data Sheet (SDS) for further information.**

## DISCLAIMER

The information and recommendations contained herein are based on our research and are believed to be accurate, but no warranty, express or implied, is made or should be inferred. Henkel recommends purchasers/users should test the products to determine acceptable quality and suitability for the intended use. All adhesive/sealant applications should be tested under simulated or actual end use conditions to ensure the adhesive/sealant meets or exceeds all required project specifications. Since assembly conditions may be critical to adhesive/sealant performance, it is also recommended that testing be performed on specimens assembled under simulated or actual production conditions. Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute a permission, inducement, or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

## LIMITED WARRANTY

This product is warranted by Henkel Corporation to be free from defects in materials when used as directed. Henkel's sole obligation shall be, at its option, to replace or refund the purchase price of product proven to be defective. Henkel makes no other warranty – express or implied – including warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE and will not be liable for consequential or incidental damages. For warranty assistance, contact Henkel at 1.800.624.7767 M-F 9:00 am to 4:00 pm ET.



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