

# How To Silver Blown Glass

with a Blown Glass Mirroring Kit from [AngelGilding.com](http://AngelGilding.com)

These instructions tell you how to mirror inside a glass container. The metal layer that produces a mirrored surface is formed by molecular attraction rather than gravity. You can mirror any shape so long as the glass is clean and it is in contact with the right chemicals for the right amount of time.

**The mirroring process is the same for all metals.** Once you have learned how to create a silver mirror, use the same process to create gold, copper and galena mirrors. See our Angel Gilding, Copper and Galena Instructions for details. To distress a silver mirror, see our Antique Silver Instructions.

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Mirroring is a chemical process; the following procedures are *important*.

- **Cleanliness:** The glass must be absolutely clean, including the edges.
- **Gloves:** Wear gloves to keep your hands and the glass separate.
- **Careful measurements:** Be careful but not fanatical with measurements.
- **Distilled Water:** Always use steam distilled or de-ionized water. The minerals in tap water will ruin the mirror.
- **Timing:** Use a clock with a second hand to time the tinning process in Step 5.
- **Concentration:** Arrange your time so you can work without interruption.

## SAFETY:

- **Storage:** Store the chemicals in a cool, dark place away from children and pets.
- **Staining:** Mirroring chemicals can stain. Wear rubber gloves and cover your bench with several layers of newspaper.
- **Fumes:** Silver chemicals contain ammonia. Work in an open space or use one of our respirators designed to block ammonia and formaldehyde fumes.
- **Waste Disposal:** Mirroring chemicals contain heavy metals. Your kit includes a waste treatment system to keep heavy metals out of the public sewer system.

This Kit contains enough silver to mirror about twelve beer bottles or their equivalent. Refill supplies are available at [www.angelgilding.com](http://www.angelgilding.com).

## You will need to provide:

- The glass to be mirrored
- A few gallons of steam distilled water
- Two clear plastic bottles for Waste Treatment
- A clock with a second hand
- Sheets of old newspaper

## To Make a Silver Mirror

### Step 1: Clean the Glass



Add about ½ teaspoon (2 ml) of Liquid Glass Cleaner to about 8 fl oz of HOT tap water. Pour it into the container to be mirrored and swirl and shake. The amount of cleaning you need to do will depend on the history of the container. Glass for mirroring must be **very clean**. Rinse well with tap and then distilled water and shake out all the excess.

### Step 2: Mix the Tin for Silver



Use the 10 ml cylinder to measure out **2 ml** of concentrated Tin for Silver. Pour it into the measuring cup. Add **2 fluid ounces** (60 ml) of steam distilled water. Use 2 fl oz diluted tin for each square foot of glass.

Diluted tinning solution has a shelf life of 6 to 8 hours. Mix fresh daily.

### Step 3: Measure the Silver



Pour the Silver chemicals into the appropriate Mek dispenser bottles. Squeeze up **15 ml each** Silver Solution, Silver Activator and Silver Reducer for **each square foot** of glass to be mirrored. Cap the bottles and set them aside for now.

### Step 4: Rinse the Glass



Rinse the glass again with distilled water. You need to start the mirroring process with clean, wet glass.

Cut a piece of latex or Evalite foam (included in the Kit) to hold over the container opening as you mirror it.

### Step 5: Tin the Glass



Pour in the diluted tin and seal the opening. Swirl the tin over the glass for 30 seconds. Watch the clock or use a timer. Make sure the glass is completely covered.

### Step 6: Rinse the Glass



Pour out the tin and pour in some steam distilled water to rinse the glass. Swirl and pour out the water.



### Step 7: Mix the Silver

Take two new paper cups and pour the 3 measured silver chemicals into one cup. Pour them into the other cup to mix them. The chemicals should not change color in the cup (**very** pale yellow is ok).



### Step 8: Silver the Glass

Pour in the mixed silver and seal the opening. Swirl the silver over the glass for about **5 minutes**. You will be able to see the mirror develop from brown to bright silver.

*(The color of the mirror will depend on the glass. For some unknown reason the beer bottle I used here turned purple when I silvered it.)*



### Step 9: Rinse the Mirror

Pour the used silver into your Waste Treatment bucket. Spray or pour distilled water into the bottle and shake it thoroughly to rinse the silver. Pour the rinse water into the waste bucket too.



### Step 10: Drain the Bottle

Let the container drain and dry completely. Any moisture trapped in the silver by the backing paint will eventually tarnish the mirror. *(see the following note on drying complex shapes)*



### Step 11: Protect the Mirror

Protect the dry mirror with clear or black lacquer even if the piece has a small opening. Sulfur and other contaminants in the air will soften and tarnish unprotected metals.

### Step 12: Stand Back and Admire Your Handiwork

The mirroring process is basically the same for all metals. Once you know how to make a silver mirror, you can use the same process to create a Gold, Copper or Galena mirror. Please see our separate instructions for details.



Photos by Edward King, Oak Park IL

**Note on drying complex shapes:**

Blown glass sculptures with long thin areas, curved points and narrow openings can take a long time to dry. You will have better results if you do not hurry, but you can try this trick to speed up the process.

**WARNING:** Acetone is FLAMMABLE! Do not use near an open flame, spark, electrical hot plate or any other source of ignition.

1. Rinse the newly mirrored surface with distilled water.
2. Drain out as much water as possible.
3. Pour in a moderate amount of acetone. The acetone will displace the water and tend to drive it out.
4. Rotate to cover all the surfaces with acetone.
5. Allow the acetone/water mix to drain out completely.
6. Allow time for all the acetone and water to dry before lacquering the surface. Any moisture trapped under the lacquer can discolor the mirror over time.

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