

# **Copper Mirroring Instructions for Bright and Original Copper Formulas**

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Original Copper mirrors are dark peach. Bright Copper Mirrors are the color of perfectly polished copper metal. Our Mirroring Kits include a 1” sample of both colors applied to flat and textured glass.

The process of mirroring with Bright Copper and Original Copper is the same. The time it takes for the mirror to form on the glass is different – see our checklist below. These instructions assume that you know how to make a silver mirror.

**NOTE:** Although our chemicals have the same name (Copper Solution, Copper Activator etc) they are *not* interchangeable. You will not be able to mirror the glass if you mix Bright Copper chemicals with our original Copper chemicals.

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## **Copper mirrors differ from silver mirrors in 2 ways:**

- 1) Use Tin for Gold instead of Tin for Silver to sensitize the glass.
- 2) Use Palladium Sensitizer on top of the Tin for Gold to super-sensitize it.

## **Mix Tin for Gold**

- 1) Use the 10 ml cylinder to measure out **3 ml** of concentrated Tin for Gold. Pour it into the 16 oz measuring cup and add **16 fluid ounces** of steam distilled water. You may have more diluted Tin for Gold than you need, but you will have the right ratio of Tin to water.
- 2) Diluted Tin for Gold has a shelf life of 6 to 8 hours. Mix fresh daily.

## **Mix Palladium Sensitizer**

- 1) Use the 10 ml cylinder to measure out **2 ml** of concentrated Palladium Sensitizer per square foot. Pour it into a measuring cup and add **2 fluid ounces** of steam distilled water per square foot. This is the same mixing ratio as Tin for Silver
- 2) Diluted Palladium Sensitizer has a shelf life of 6 to 8 hours. Mix fresh daily.

## **Notes:**

- Use **10 ml** each of the 4 copper chemicals per square foot of glass (40 ml total).
- Mix the chemicals in clean **glass** containers. Do not use paper or plastic cups.

## Copper Mirror Checklist

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1. Set out the chemicals, tub, rack, cleaning mat and glass.
2. Mix up the Tin for Gold as directed.
3. In a separate cup, mix up the Palladium Sensitizer as directed.
4. Clean the glass with glass cleaner and hot tap water. .
5. For flat or 3-D glass, polish with hot, wet cerium oxide and glass cleaner.
6. Remove the cerium oxide with a sponge, brush or paper towel.
7. Rinse it thoroughly with distilled water and tip all the water off.
8. Pour on at least **2 fluid ounces** of diluted Tin for Gold per square foot.
9. Let the Tin sit on the glass for about 30 seconds and rinse it off.
10. Pour on at least **2 fluid ounces** of diluted Palladium Sensitizer per square foot.
11. Let the Palladium Sensitizer sit for about 30 seconds and rinse it off.
12. Measure out **10 ml** of each Copper chemical per square foot of glass.
13. Tip all the rinse water off the glass.
14. Pour the Copper Solution, Copper Complexer and Copper Activator into one glass container.
15. Pour the chemicals back and forth into another container 2 or 3 times to mix them.
16. Add Copper Reducer and pour back and forth again.
17. Pour the mixed chemicals on the glass.
18. Rock the glass gently to get an even distribution.
19. Let the copper sit while it deposits on the glass – about 5 minutes for Bright Copper and about 10 minutes for Original Copper.
20. Rock the glass gently to move the chemicals around every few minutes.
21. Pour the chemicals off the glass into your tray or waste bucket.
22. Rinse the mirror thoroughly with distilled water.
23. Stand the mirror on edge to dry.
24. When it is dry, back it with backing paint. Let the paint dry completely.
25. Use Copper Remover and pumice to clean the face of the mirror.
26. Stand back and admire your handiwork - a “peach” mirror is a rare thing.

## Using Bright Copper on Blown Glass and 3-D Glass

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**Please read and follow all the steps in our Copper Mirror Checklist.** These notes tell you how to modify those instructions when you want to mirror inside a glass container or when you want to mirror small glass objects placed in our 3-D glass “mirror bath” tray.

*Copper chemicals work faster when they are in motion.*

It takes only **2 to 4 minutes** to develop an opaque mirror on glass when you are rocking the container or the tray. Watch carefully to see how the mirror develops and pour off the chemicals when the glass is nearly opaque.

*Copper mirrors peel off the glass when the film is too thick.*

If you find that the copper is lifting off the glass as you mirror it then it is probably because the film was too thick.

All copper mirroring formulas are prone to blistering. Our new copper formula is robust but the film will peel if you try too hard to get a totally opaque film. If your first film layer is not as dense as you would like, pour it off, rinse the glass well with distilled water and apply a second layer of copper. Do not re-sensitize the glass.

*All chemicals deposit more evenly on clean, **wet** glass.*

Even if your glass is fresh from the kiln, you will get a better deposition if you take the time to wash and rinse the glass before you mirror it. All the chemicals will deposit more evenly on clean wet glass.

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