

— *Silhouette*101 —

# GUIDE TO GLASS ETCHING

Learn how to etch glass  
from start to finish

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## Introduction

In this eBook, we'll teach you how to use Silhouette's etching cream and your Silhouette machine to create etched-glass projects. Etching cream is a chemical that will permanently etch custom designs and text onto glassware and mirrors.

You'll learn how to etch glass from start to finish, beginning with creating your stencil design, cutting the stencil, and then using that stencil with etching cream to transform your glass projects. You'll find plenty of helpful tips along the way.

The examples in this book use the Silhouette Cameo® 3, but any Silhouette digital cutter can be used to create etching stencils.

## Basic supplies

Here's what you'll need to get started on glass etching.

- ▶ **Etching cream:** A chemical that permanently removes a thin layer of glass, porcelain, and ceramic surfaces.
- ▶ **Stencil vinyl:** Clear vinyl that acts as a barrier to the etching cream so only the exposed portion of the design is etched.
- ▶ **Transfer tape:** Use transfer tape to temporarily hold stencil-vinyl cutouts in place when removing them from their original backing and attaching them to the intended project surface.
- ▶ **Hook tool:** Use a hook tool after your stencil is cut so you can easily pick away, or weed, the parts you don't need.
- ▶ **Scraper tool:** Rub the vinyl that's applied with transfer tape with the scraper tool so that the vinyl gets a firm grip on the surface.

These first five basic components are all included with the Silhouette Glass Etching Starter Kit. You can also purchase those items individually and, if you've worked with vinyl before, you may already have some of them.

## Additional supplies

In addition, here are some other things you'll find useful when etching glass.

- ▶ Foam brush or other applicator, whatever you prefer
- ▶ Gloves
- ▶ Eye protection
- ▶ Glass cleaner
- ▶ Paper towels
- ▶ Measuring tape or ruler
- ▶ Masking tape
- ▶ Skinny craft sticks
- ▶ Protective surface
- ▶ Sink with running water

You can use most smooth glass items, including mirrors, for etching. Flat objects and straight cylinders are great etching items, but uneven or round surfaces can make it hard for the vinyl to get a perfect seal against the glass.

You might run across some glass that won't take the etch, like some glass casserole dishes and pie plates. You should test the etching cream on an inconspicuous area of the glass first, if possible.

Finally, we'll be working with the Silhouette Studio® software. You can use any Silhouette cutter to cut the vinyl we use for etching. This includes the Cameo, Portrait, or Curio.

## Basic application

The steps to creating a glass-etched piece are really quite simple. We'll explain more about the fine details as we work through some projects, but in each case you'll need to do the following:

- ▶ Create a stencil design
- ▶ Cut it out from stencil vinyl and weed the vinyl
- ▶ Use transfer tape to apply the design to your glass surface
- ▶ Apply the etching cream to the exposed design and let the cream sit
- ▶ Scrape away the excess cream
- ▶ Rinse the glass
- ▶ Remove the stencil

Let's get started!

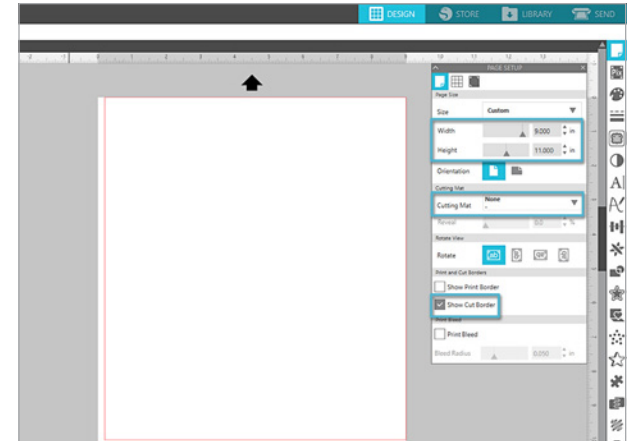


## Etching flat surfaces

For this first project, we'll etch a flat glass cutting board. Flat objects are the easiest to work with.

Measure the cutting board, including where the legs are, and then move to Silhouette Studio® to create the design.

Because we're using stencil vinyl that comes on a 9-inch roll, set your media size in the Page Setup panel to be 9 inches wide by 11 inches high. You can adjust the height based on your design later.

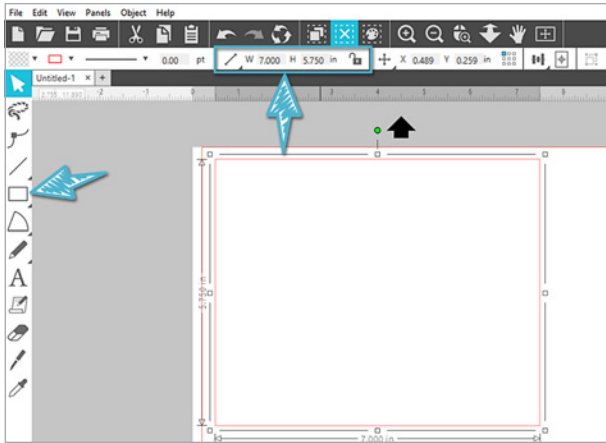


To cut this design directly from the roll, choose Cutting Mat: None.

**Note:** You can cut directly from the roll or on a cutting mat with a Cameo or a Portrait machine, but if you're using Curio, you must use a cutting mat and adjust your media size and mat accordingly.

Any time you're creating a stencil, which is what is usually done for a glass-etching project, make sure the stencil doesn't lay on any curved or bumpy surfaces. For this glass cutting board, we want to avoid applying the stencil on the legs. We'll etch the back side where the legs are.

Draw a rectangle so the top edges are the same height as the cutting board and the side edges fall within the cutting board legs. Finish those dimensions in the Scale option on the Quick-access Toolbar.



Choose your design to etch and open it in the software. This example uses “The Chef is Always Right” design (Design ID #232382). Drag it inside the rectangle and resize it to fit.

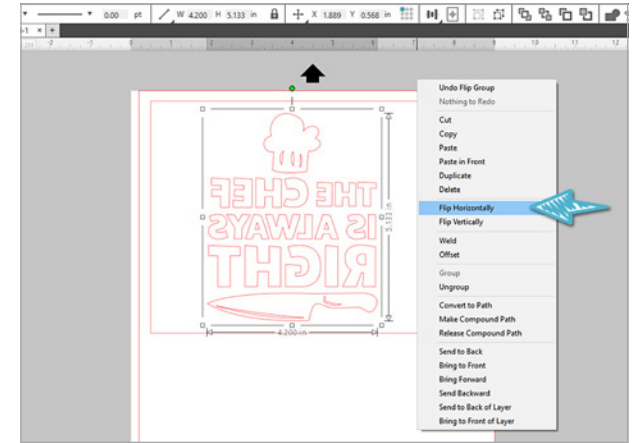
The rectangle is going to act as a barrier for the etching cream. Whenever you’re doing glass etching, you need to have an outer border. Don’t let the edge get too close to the design itself, because any etching cream that goes beyond the border will etch into the exposed glass.



This top and bottom stencil border are pretty close to the design in this example, but they also go to the edge of the glass and won’t leave it exposed.

Most of the time when you’re doing glass etching, you can leave the design as you see it. However, because we’re going to etch the back side of the cutting board to leave the cutting surface completely smooth, we need to mirror this design.

Select the design, right-click, and choose Flip Horizontally (or go to Object > Mirror > Flip Horizontally).



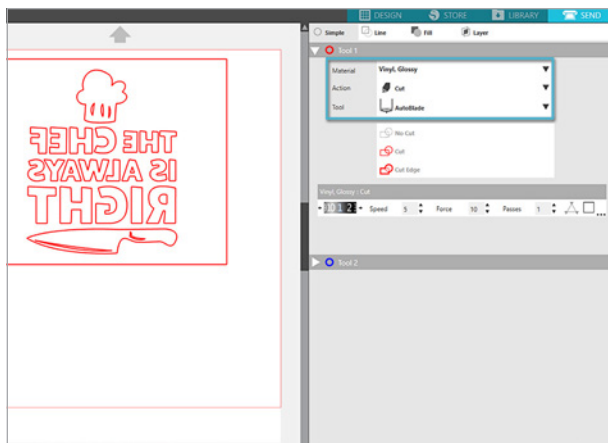
Now center the design within the rectangle by selecting both and choosing Center from the Quick-access Toolbar (or go to Object > Align > Align Center-Middle).

Group (Ctrl + G or Cmd + G) the shapes so they move together. Position the stencil design within the cut borders on the page.

Now we’ve got our stencil ready to cut.

Go to the Send tab and choose

- ▶ Material = Vinyl, Glossy
- ▶ Action = Cut
- ▶ Tool = AutoBlade (or whichever blade you prefer for your machine)



Perform a Test Cut, if necessary, and adjust your cut settings.

Verify the design preview is bold red and will cut where you expect.

### To cut directly from the stencil vinyl roll

- ▶ Trim a straight edge on the vinyl roll so it feeds in with the two corners at exactly the same length
- ▶ Adjust the rollers for 9-inch vinyl on the Cameo, if necessary, and make sure the release lever is locked in place
- ▶ Load the vinyl directly into the machine, glossy side up



When ready, press Send in the software to cut.

When finished, unload and trim off the roll beyond the edge of the stencil design.

### Weeding



Use the hook tool to weed the vinyl, removing the outside edge first, where it touches the outer edge of the vinyl backing.

Leave the stencil mask border (the rectangle we drew) in place on the backing.

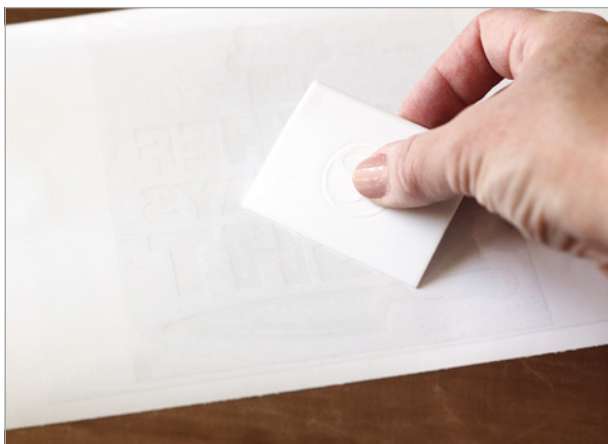
Work from the outside towards the center so you don't confuse which pieces need to be removed. Remove the design pieces where you want the glass to be etched. Be especially careful to leave letter centers in place on the backing when you are weeding.

### Stencil application

When the design is all weeded, place transfer tape across the design. Stencil vinyl comes with its own transfer tape, but you can use other varieties of transfer tape as well.

With a stencil, you don't need to make the transfer tape go completely to the edge of the vinyl. The important part is that it picks up all the pieces in the center.

Use a scraper tool to press the transfer tape down against the design.



On a protective surface, flip the cutting board facedown so we can etch the back side. Remember, most of the time, you'll be etching the front of a surface, but that is not the case for this project.

**Tip:** Use grid paper under your glass to help align the placement of the stencil vinyl.

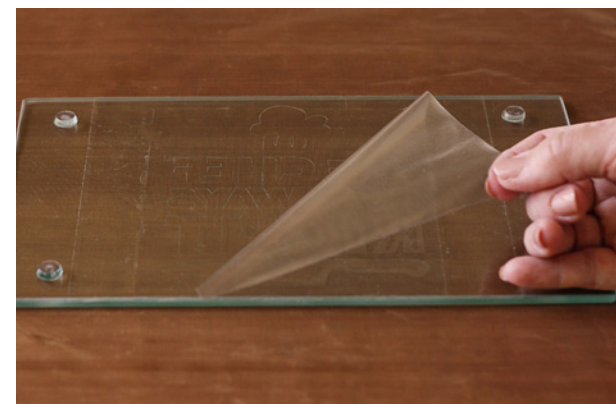
Carefully peel the transfer tape and the stencil from its backing and place the stencil on the clean glass surface. You may find it helpful to use the top edge of the glass to help place the design straight, since we made the stencil the same height as the glass. Try to center it and place it so the design is level.

Place the center of the design first and gently smooth it out toward the edges. Try to avoid bubbles or puckering!



Press against the design and transfer tape with a scraper tool.

Carefully remove the transfer tape so only the stencil lays against the surface to be etched. Make sure the letter centers and other inner design pieces stay on the glass.



Add masking tape, if necessary, to extend and protect the edges. Masking tape also helps provide a very visible indicator of the edge, so you don't accidentally go past and etch beyond the clear stencil.

Press down all of the design borders to get a tight seal against the glass.

**Tip:** If you have any areas that are not laying smoothly against the etching area, you're better off removing it and cutting a new piece. Bubbles that exist away from the design itself are fine; you can leave those alone.

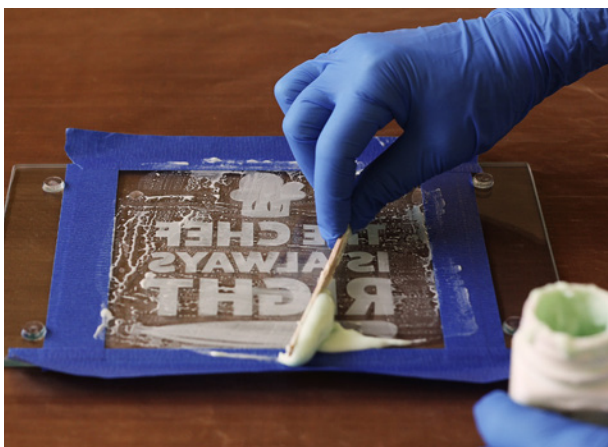
Put on gloves and safety glasses, stir the etching cream, scoop out or pour the cream onto the exposed design, and gently smooth out an even layer with an applicator, such as a foam brush. You can also use your scraper tool or the craft stick to spread the cream—whatever feels comfortable to you.



Do not scrape the cream or push hard against the glass; the cream could seep under the stencil's edges.

Wait 30–60 seconds, as directed on the etching cream instructions.

Carefully scoop up the excess etching cream and put it back into the bottle. This cream can be used again.



Gently wipe the glass with a paper towel (optional) and move to a sink to rinse off the remaining etching cream.

Watch your gloves for extra chemicals to make sure you don't spread any etching cream beyond the stencil area as you handle the glass.

Rinse the glass under running water.

Remove the stencil material and masking tape, and then discard them. Feel for and remove any remaining stencil vinyl. (This part is easiest with your gloves removed.)



Rinse the glass again or wipe it down with glass cleaner, if necessary.

The design doesn't really show when it's wet, but as soon as it's dry, you can see the results.



Etching kitchenware like this makes a great housewarming gift or a handmade gift for newlyweds. You can also personalize glass with names or dates by using your text tools.

As mentioned earlier, flat surfaces are pretty easy to etch. This includes straight-sided cylinders, like vases and jars. Remember that you usually cut the design without mirroring it and etch on the top side of the glass.







First, avoid horizontal designs. If the design is mostly square, circular, or vertical, you may not notice much warp as you apply it. You can also try organic shapes like leaves and branches, or flowy text without a baseline as on these mugs. That way, you won't notice if it curves a little.



Second, skip using the stencil, and just apply separate small vinyl designs individually along the glass. Then etch the entire glass surface, leaving clear designs among a frosted-glass background.

## Etching curved or tapered objects

Now we'll talk about etching tapered objects that do not have equal widths at the top and bottom.

A drinking glass is a good example of a tapered object where the sides are straight and flat, but the top and bottom widths don't match. When you apply vinyl to a tapered object like this, especially if the design is generally horizontal, the vinyl will curve as it's applied.

You've got a few options to deal with curved or tapered glass.



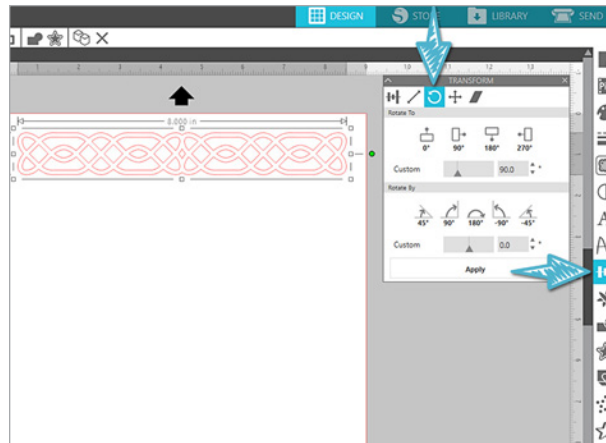
Placing small designs individually or in vertical strips as on this vase helps you avoid the curve or warp that happens when applying a larger design or stencil on a curved or tapered object.

Another option is to use the Conical Warp tool if you have Silhouette Studio® Designer Edition Plus or Business Edition. Let's explore this method further.

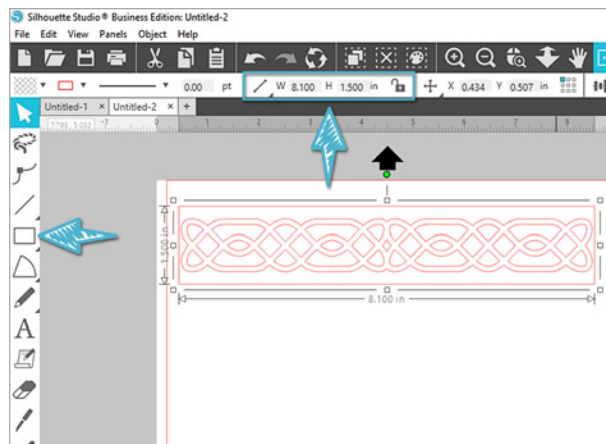
If we want to create a top border for this glass, there's really no way to do it with a single-piece stencil unless you have the software compensate for that curve.

If your design spreads out horizontally, the curve as you apply vinyl to a tapered object will be especially apparent. The Conical Warp tool rectifies that.

We're going to use this Celtic Border design (Design ID #71675). Rotate it horizontally 90 degrees. You don't need to resize it yet because you can do that as part of the Conical Warp process.



For the stencil for this drinking glass, draw a rectangle 8.1 inches wide by 1.5 inches high to act as the stencil. We chose 8.1 inches because it's 0.10 inches longer than the design itself. We want that width to be pretty close to the width of the design since the stencil will wrap completely around the glass.

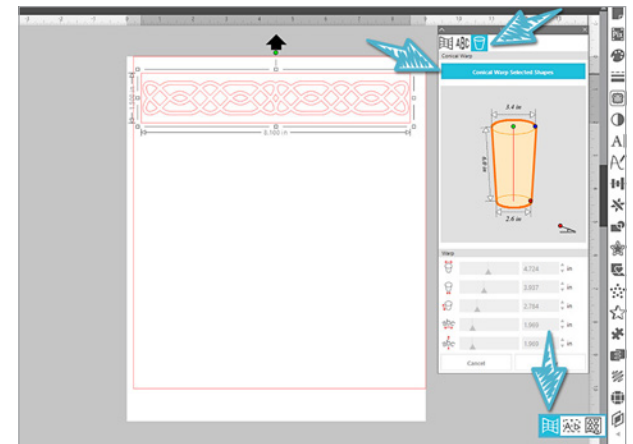


**Note:** If you're doing a different design and not wrapping it around the entire glass, you can make the borders of the rectangle larger for your protective stencil.

Select and Center the design and rectangle together. Then Group them together.

We want this stencil to be curved with the rest of the design, and that is why we're drawing the stencil border before applying the warp.

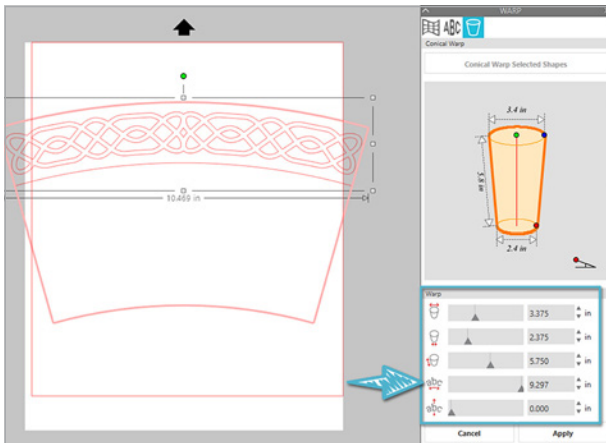
Now open the Warp Panel and go to the Conical Warp tab, which is available in Designer Edition Plus or Business Edition.



With the design selected, choose Conical Warp Selected Shapes.

Now input the measurements of your glass. For this particular glass, they are as follows:

- ▶ 3.375 inches across the top
- ▶ 2.375 inches across the base
- ▶ 5.75 inches tall
- ▶ Always use this input or slider here to resize a warped shape, not a corner handle. Just drag that to the maximum for this example because we want it to reach all the way around as much as possible.
- ▶ Adjust the vertical position to 0 so we can use the top edge of the stencil as our guide along the top of the glass.



**Note:** If you are NOT doing a border design that goes all the way along the top edge, the top three inputs will always be for the size of your tapered surface. The resize slider adjusts the size of your design, and the vertical slider is for where you intend to place your design.

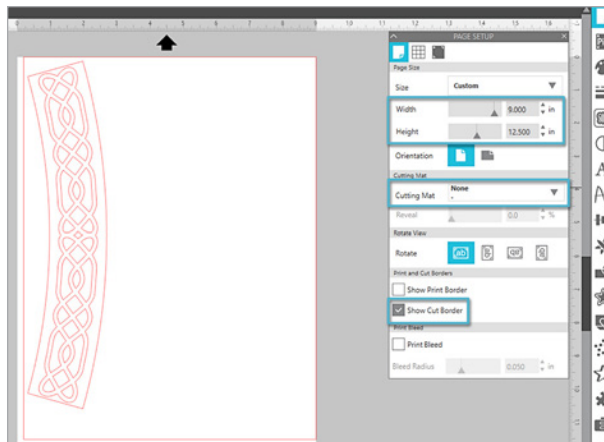
When it looks good, click Apply.

If applying the warp ungroups your shape, simply select and Group it again.

This curved stencil and the Celtic design will straighten out as we apply it to the tapered glass.

Rotate this design sideways again to fit lengthwise on the 9-inch vinyl.

Check the Page Setup panel to verify the media size is set for 9 inches wide and no cutting mat. The full design should fit within the cut borders.



Use the same material settings in the Send Tab as previously used:

- ▶ Material = Vinyl, Glossy
- ▶ Action = Cut
- ▶ Tool = AutoBlade (or whichever you prefer for your machine)

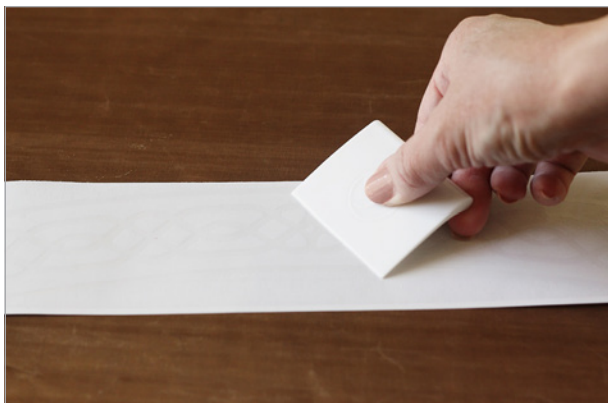
Load the vinyl into your machine as described with the first project, and then click Send in the software to cut.

Once the stencil has finished cutting, unload the stencil vinyl from your machine and trim it down closer to the stencil borders.

Weed the design, working from the outside in. You'll peel away the design itself and leave all the little center pieces still attached to the backing.



Use a piece of transfer tape large enough to cover the design and smooth it against the design with the scraper tool. Then pull the stencil and transfer tape all off the backing together.



Apply the stencil vinyl so the top edge of the vinyl lines up with the top edge of the glass. We suggest starting from the center of the design and working outwards.



If you started applying it straight, the top edge of the vinyl should follow the top of the glass pretty closely all the way around. This is why it's nice to have the stencil edge warped along with the design.

Gently press from the center of the design to the top and bottom in order to avoid bubbles or puckering.

Remove the transfer tape and press down to seal all the edges where the glass is exposed. This seal is always important when you are placing a stencil for etching glass.

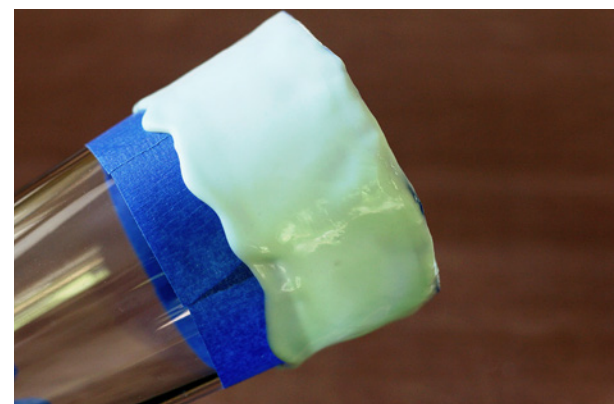


Apply masking tape on the top and a thin strip in the center where the design does not meet. You'll need a few shorter lengths because they will curve when applied to the glass.



Even though the top edge of the vinyl goes to the top of the glass, it's a good idea to still apply extra masking tape here in case the etching cream drips and slides since we are covering such a wide area.

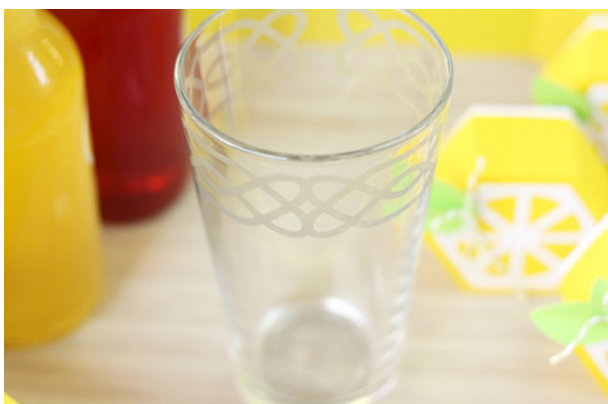
Put on gloves and safety glasses, stir the etching cream, scoop out or pour the cream onto the exposed design and gently smooth out an even layer of it with an applicator.



Let the etching cream sit for 30–60 seconds (follow the instructions on the container). Don't let the cream drip onto any exposed glass!

Gently scrape the excess etching cream into the bottle, and gently wipe the excess cream away with a paper towel. Make sure any cream on your gloves doesn't touch the exposed glass.

Rinse the glass under running water. Remove the stencil completely and wipe the glass dry.



You'll probably run across a lot of glass that's tapered that you might want to etch. If you choose your designs carefully, you may not notice any natural warping. But if you think you'd like to etch glass on tapered surfaces very often, we highly recommend investing in Designer Edition Plus or Business Edition so that you can take advantage of the Conical Warp tool.

## Troubleshooting

If you get designs that are not crisp after etching, here are a few things to watch for:

- ▶ Only one or two imperfect spots usually means an application issue. You likely had gaps at the design edges. To avoid this in the future, you should press the vinyl better at all the edges and scrutinize the entire design before applying the etching cream.
- ▶ Gaps occur more often on rounded surfaces, so try to avoid placing large stencils on obvious curves.
- ▶ Multiple edge flaws and all-over lack of crisp lines could mean a vinyl issue; perhaps the vinyl adhesive was not strong enough. Try a newer roll or try a different type of vinyl, such as a glossy vinyl that has a more permanent adhesive.
- ▶ Unfortunately, there is not a way to correct already-etched pieces. If you can't smooth out gaps at the design edges once the vinyl is applied, you're better off peeling the stencil off and starting over before applying the etching cream.

## Conclusion

We hope you've enjoyed learning about glass etching! Now you know the tools and supplies you need, how to create your stencil designs, how to cut and weed your stencils, and the process for applying stencils and etching cream. We hope we've also sparked some ideas on different glass objects you can use for your etching projects.

If you're just starting out, you probably have some glass in your home, like condiment jars, to practice on, or you can visit the glass section of your local thrift store. We think you'll find that glass etching is pretty fun and is a great way to personalize glass items.

If you need more inspiration, visit our blog, [Silhouette101.com](http://Silhouette101.com). For help, you can reach out to Silhouette Support on [SilhouetteAmerica.com/contact](http://SilhouetteAmerica.com/contact). And be sure to check out our other videos and eBooks, also on [Silhouette 101.com](http://Silhouette101.com).

Enjoy making your etched-glass projects!

### Designs Used:

The Chef is Always Right | Design ID: 232382 | Page 5

Set of 4 Travel Icons | Design ID: 42073 | Page 8

Mr and Mrs | Design ID: 249151 | Page 9

Bobine Abstract Overlay | Design ID: 45034 | Page 9

Celtic Border | Design ID: 71675 | Page 10