

## Materials List

Colors from Colors for Earth  
Assorted Glass Colors

Glass:  
Clear glass any COE

Brushes: By Royal & Langnickel  
Assorted soft hair brushes  
Wisp Brushes

Miscellaneous:  
Fire Paper  
Drape or Slump Molds  
Ceratek Fiber Cloth from Slumpy's  
Comet Cleanser  
Paper Towel  
Glass Separator or Kiln Wash

### Contact the Artist

Michael Harbridge  
P.O. Box 108  
Iola, WI 54945  
(715) 281-6450  
info@claypuzzling.com  
www.claypuzzling.com



Turn ordinary glass into extraordinary glass with the use of fired glass colors. This method can be done on nearly any clear glass including window glass or special fusing glass. Many glass plates will also work. Experimentation is suggested. Please read through all of the instructions before beginning.

### Create Marbleized Glass

- 1) Clean the glass and prepare your colors as explained on the next page following the instructions from Colors For Earth.
- 2) Use a soft brush to dab colors randomly on the glass. Allow the colors to run into one another, drip and bleed. Cover all areas of glass unless you want to leave some openings.
- 3) Lift the glass and tip and turn, allowing the colors to flow and marbleize.
- 4) Allow to dry and wipe any color on the underside of the glass and fire following the instructions on the next page.

### Create Faux Raked Glass

- 1) Clean the glass and prepare your colors as explained on the next page following the instructions from Colors For Earth.
- 2) Use a soft brush to dab colors in circles or straight lines on the glass. Allow the colors to run into one another, drip and bleed. Cover all areas of glass unless you want to leave some openings.
- 3) Pull the wisp brush through the wet colors to create straight lines or curvy line patterns and streaks. .
- 4) Allow to dry and wipe any color on the underside of the glass and fire following instructions on next page.



## Slump and Drape Molds

Slump molds are shapes where the glass is placed over the top so the glass drops down when fired. Drape molds are where the glass is placed on top and the glass drapes down over the sides. Many manufactured slump and drape molds are available. They are usually made with ceramic bisque or stainless. If making your own ceramic molds, make sure you place small holes in areas where air could get trapped when the glass slumps or drapes in firing. Also make certain the mold is coated with glass separator or kiln wash before using.

When making or working with drape molds, make sure the mold tapers out from the top so the glass can be removed easily. It also helps to place Ceratek Fiber Cloth over the top of the mold, preventing the glass from getting tight around the top edge. Use caution, because the fabric can leave a texture in the glass. Prevent the texture by placing fire paper between the glass and the fabric. The fabric is reusable, but the paper is only one time use.

Most importantly, remember the painted side of the glass MUST face away from the mold when fired.



**These instructions are from the Colors For Earth Website [www.colorsforearth.com](http://www.colorsforearth.com)**

**Check their site for even more techniques and expanded instructions. Color kits are also available at a 20% savings for a limited time!**

Colors for Earth is proud to introduce our "Fired Glass Color" line. 27 of the colors are lead-free (non-toxic) and we have 2 colors that have a health warning. These colors are vibrant just like our translucent underglaze color line. The names and numbers of the glass line coordinate with our current product line so that you can easily create your glass projects to match your ceramic ones.

They are in a powder formula that is mixed with our GM300 Glass Color Medium. By mixing with medium it will ensure an opaque glossy finish. The 27 colors are non-toxic/food safe. Do not use the 2 colors that have a health warning on any surface that will be in touch with food or drink.

The colors can be used on most types of glass including COE 90 and COE 96 as well as float (window) glass. They also can be used as an overglaze on glazed ceramic pieces. We have a Black Outline and White Outline which will allow you to create different looks.

When the colors are thinned they can be brushed, sponged, sprayed or applied with a pen or gizmo. The dry colors can also be sifted over the glass for different techniques.

Firing is cone 015-016 or from 1457° to 1479° in a ceramic or a glass kiln. Our glass colors hold their color to a much higher temperature when used on ceramic or porcelain bisque.

### Instructions for using Glass Colors:

**Cleaning Glass:** Clean both sides of the glass by scrubbing with powdered cleanser such as Comet. Rinse well. You will need to determine the correct side of the glass to paint on by watching the way the water comes off the glass. One side will sheet off and the other tends to bead up and fall off. You want to paint on the side that sheets off. When correct side is determined, dry with lint free paper towel keeping the correct side up. After cleaning, handle glass by the edges only, or use paper towel as your fingerprints will show after firing.

**Mixing Colors:** Add a few drops of GM300 Glass Color Medium. Mix with either palette knife or brush. Continue to add a drop or two and mix until you have the thickness of cream. The mixed colors should be thin enough to flatten out when applied to the glass. If the color is too thick and your brush marks don't smooth out, add a drop of water to thin. If the colors are too thin they will tend to run when you are applying them to the glass. You can add a bit more powder to thicken. Remember to mix only what you will use at that time and discard any that is left.

**Intermixing Colors:** All non-toxic colors can be intermixed to achieve additional shades of colors. And colors with health warning can be mixed with each other for different shades also.

Allow design to dry. 1-2 hours.

**Firing:** Glass can be placed on a kiln washed shelf or in a prepared glass sagger of choice with the painted side up. Glass should be the same diameter as the sagger or a little smaller, but never larger than the sagger.

**Kiln Setter Kiln:** In a ceramic kiln with a kiln setter, fire to witness cone 015 or 1479 degrees. Leave peep holes closed during firing. Vent lid a quarter inch during the entire firing and cooling cycle. The colors will mature at a cone 016 but in most kilns an 015 will give a much better surface. The G310 Vermillion and G318 Pumpkin require an 015 firing to develop the color. You may need to test your kiln to see which cone gives you the better surface.

**Electronic Kilns:** Usually offer two options for firing. You can program them to fire to a specific cone at a medium speed or you can override this and use the ramp feature.

If you find programming for cone firing does not work on your kiln, use the ramp mode. (Check your manual for complete details on how to use this feature.) This will allow you to program to a certain temperature and "ramp" the rate up by so many degrees per hour. I would suggest that when firing single layer glass, you use 400-500° increase per hour to maturity with no hold (soak) time at the end of the firing cycle.

We suggest the following schedule when fusing two or more layers of float glass or when firing a fused piece for the second time. This is a very slow schedule and will enable gasses to escape to prevent bubbles, also it will prevent cracking in a second firing.

Firing segment #1 300F per hour hold at 500F for 10 minutes

#2 300F per hour hold at 900F for 10 minutes

#3 400F per hour to 1480°

#4 Cool and hold at 900F for 5 minutes

#5 Cool at 250° per hour and hold again at 800° for 5 minutes

#6 Off

The above is offered as a suggestion, a starting point, and you will need to adjust for your kiln. Float glass will mature at 1450° in some kilns and need as much as 1550° in other kilns.



Glass Colors have a wide firing range, 1400° to 1800°. The upper end of this range is much hotter than glass can withstand, it will melt into a puddle!

We fire in a ceramic kiln equipped with a kiln setter, using an 015 setter cone. Prop the lid of the kiln open 1/2 inch and turn all switches to low for 30 minutes. At the end of the 30 minutes, turn all switches to medium for another 45 minutes. At the end of this time, remove the prop and turn all switches to high. When firing is finished, allow kiln to cool naturally until the ware is cold.

\*As you know firing temperature is governed by a combination of time and temperature and all kilns are different. Always use witness cones (shelf cones) to determine the actual temperature. Firing any material, especially glass, is an art. Age of the kiln and placement in kiln will affect the results. Top shelf is usually hotter than lower shelves.

If you are new to firing glass, we suggest that you experiment with undecorated glass and the sagger you intend to use before firing a decorated piece.

Do not remove glass until it is completely cool.

