

MASON STAINS® by Mason Color Works

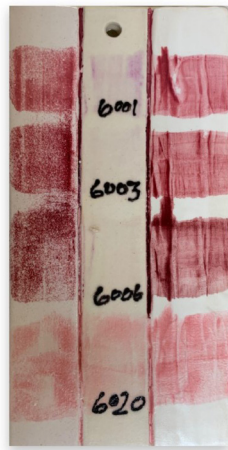
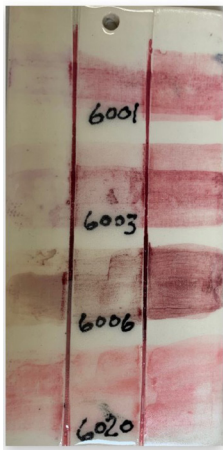


PG629 Super Clear	●	GS402 Transparent Satin
PG630 Zinc-Free Clear		

STAIN UNDER

PG601 Perfect White	●	GS412 White Satin
GLW12 Eggshell Wash		

STAIN OVER



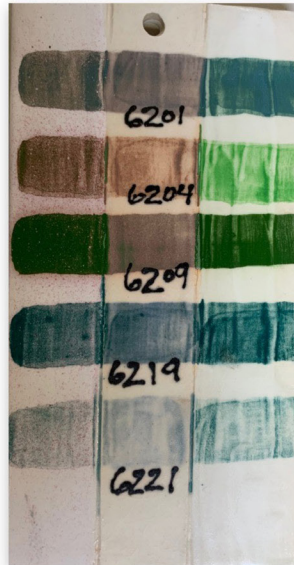
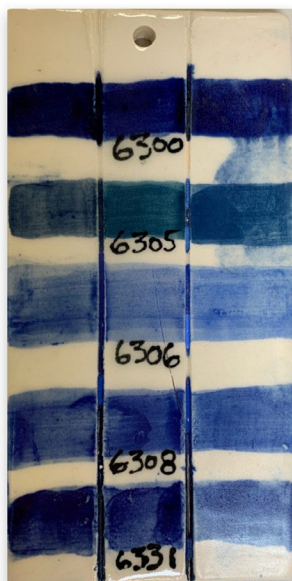
After learning to read the Mason Stain® chart, we have taken all the Mason Stains® that Georgies carries in stock and fired them under and over six of our unique ^6 glazes to aid you in their use.

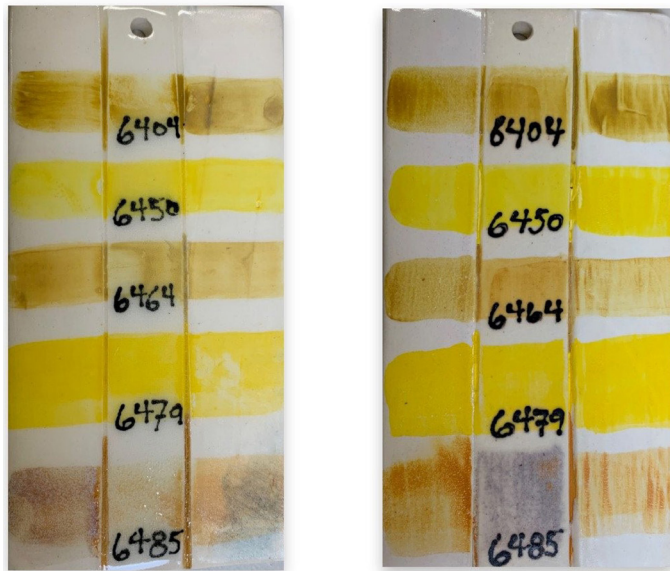
Each stain works with the chemistry of that glaze as an under-glaze color or a color over the top of the raw glaze in the “majolica” style.

Some colors respond as expected, some colors shift, others may just disappear.

You are given clues to the chemistry of some of our glazes ... Super Clear contains Zinc, Zinc-Free Clear does not contain zinc plus it has calcium to promote colors that need it.







These color tiles represent each color simply mixed with water only and a brush stroke brushed across the tile. The small amount gives you a slight indication of the intensity of color. Mason Stains®, like all pigments, will be transparent. Color intensity can be increased or decreased with the percentage used in your mixture. You will find a quick reference in your Mason Stain® chart is a guide to each color's needs.

Opacity is created with the addition of a zirconium opacifier: Opax, Zircopax, or Superpax. The percent needed is also referenced in your Mason Stain® chart. Tin Oxide can also be used as an opacifier; however, it brings a higher cost and can also enhance or alter your color response. Tin and Chrome partner to become your "pink" hues. From page 2, take a look at the "over-majolica-style" tile containing 6201-6204-6209-6219-6221. Note the pink halo-ing on the greens when over the Perfect White glaze. Perfect White is opacified with tin oxide which will always react with colors containing chrome.

- You can mix Mason Stains® into your own glazes.
- You can mix/blend Mason Stains® with each other to create unique color variations.
- You can mix/blend Mason Stains® with pure oxides, cobalt, iron, etc. to create a unique color.
- You can mix/alter commercial glazes.
- You can mix Mason Stains® into a color wash.
- You can mix Mason Stains® into a clay, clay slip or engobe; again, you can mix from your own recipe or mix into commercially available slips.

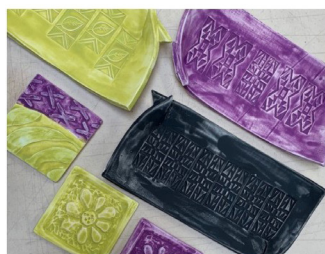
Mixing a Color Wash:

A Color Wash can be as simple as mixing the stain with water. There are a few tips worth exploring ...

- Stains are heavy and sink to the bottom.
- Stains in water alone are very fragile on the surface and tend to be easily moved by touch or brush stroke.
- Depending on the temperature that you fire, they also may require a bit of additional flux to help them 'bite' into the clay and glaze.
- I use a Gerstley Borate (a natural mineral of calcium/boron). The small amount of boron rarely affects any color.
- I also recommend a small amount of gum which promotes suspension, adhesion and brushability. The easiest gum to use is Amaco's Gum Solution.

How I mixed the wash you are using in class:

- 1 ounce sample Stain package
- ¼ teaspoon Gerstley Borate
- 8 ounces Water
- 2 teaspoons Amaco Gum Solution



This wash is easily adjusted to meet your needs, more or less water will alter the color intensity. For use with low-fire clays and glazes, you will want to increase the Gerstley Borate.

A color wash can be used on leather hard clay, bisque clay, or as a design element under a glaze. A wash can also be used as a “wipe-away” color on bisque to enhance texture.

The same color wash can be used as a design element for majolica work in any temperature range.

Mixing Mason Stains® into a Glaze:

Mixing glaze from a dry base is very straightforward. From your own formula, weigh each ingredient carefully.

The percent of Mason Stain® colorant is added over the top, ie. if you’re mixing a 100 gram batch and the amount of stain you wish to add is 5%, you will weigh and add 5 grams. You will do the same if you are adding an opacifier.

- 100% dry Glaze
- 5% Mason Stain®
- 3% Opax

You add the correct amount of water and screen through a 60 or 80 mesh sieve. This will incorporate and disperse your ingredients fully.

Mixing Mason Stains® into liquid commercial glazes:

You will need to work from a DRY point of view.

Weigh the amount of glaze you wish to color. Commercial glazes are approximately 30% water. Once you have weighed the glaze, you need to calculate the dry weight.

If the amount you intend to color is 1000 grams wet, you multiply by .70 = 700 grams. If adding the same desired 5% colorant, you multiply $700 \times .05 = 35$ grams.

I use a stick blender to incorporate the color and mix, but you will also need to process your mixture through a 60 or 80 mesh screen.

Test fire your newly colored glaze to see if your color response is the one you desire. If you want more intensity, repeat the process with more colorant.

If your color is too intense, tone it down with more uncolored glaze.

Coloring a Slip Clay or Engobe:

The process for coloring slip/engobe follows the same procedure as that of a wet glaze. In the illustration that follows, I weighed a beaker of Natural White ^6 Slip. Be sure to zero out your scale with the weight of the container you are using.

The slip weighed 1,305.9 grams

Slip is approximately 36-40% water. This slip happens to be 36% water.

$1305 \text{ gms} \times .36 = 469 \text{ gms}$

$1305 \text{ gm} - 469 \text{ gm} + 869 \text{ gms dry weight} \times .05\% = 43.4 \text{ grams}$

I miscalculated the water and the 47 grams actually = 5.4%

This is the amount in all the samples of slip you are using in class.

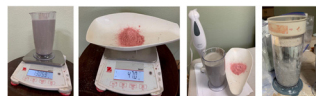


Once you have screened your colorant through a 60 mesh screen it is ready to use. Natural White is a casting slip that you can simply cast into your regular molds. You can use it as an engobe, an underglaze, or swirl it with the plain white slip or other colors to create a marbled piece. **NOTE:** Natural White is an off-white clay body. There is a small amount of iron that creates the creamy color which will slightly mute the color you are adding.



The colors to the right are ^6 fired colors that we will be using. They represent 5.4% color added.

- 6020 Manganese-Alumina Pink
- 6376 Robin's Egg
- 6485 Titanium Yellow
- 6319 Lavender
- 6500 Sage Grey
- 6600 Best Black
- 6300 Mazarine Blue



Pour your marbled slip into your mold - being sure to coat the entire surface. I like to back fill the mold with standard slip to save color.

I also pour and save the colored slip to create color with less intensity for other projects.

You can color any area of your mold by brushing the colored slip directly on the area you want to color.

This can be done well ahead - if it dries, that is OK. When you fill the mold with your casting body it will re-hydrate the colored areas.

Cast as normal.



Coloring a Clay Body with Mason Stains®:

The whiter the clay body, the better your color response will be. For the purpose of this class, I have chosen Georgies Crystal Springs Porcelain. This is a ^10 grogged body that also works well at ^6. At ^6 or ^10 this body can be translucent and vitreous. The ^6 glazes will also fit well on this body should you choose to glaze your colored work.

Some colorants along with the percentage added can introduce an additional flux to the clay body. This means that you will always want to test fire your choice, being sure that it is not over-fluxed, which can present itself in the form of a glassy surface or bloating.

You can choose to work from a dry blended clay body or moist pugged clay body. Since most of you will work from a moist body, we are proceeding through that process.

Referencing the Mason Stain® guide, the recommended percent of color is 5%. Ideally you want to calculate the percent of color on dry weight, but in the case of this class, our clay body percentage was calculated on the wet weight.

Here are the numbers:

5 lbs Crystal Springs Porcelain = 2268 grams

$2268 \text{ gms} \times .05 = 113 \text{ gms}$

Each of our color samples have 113 grams of color wedged into 5 lbs of clay.

The correct calculation would have subtracted the water weight. Most moist pottery clays are 25-26% water. This clay is 26% water.

5lbs = 2268 grams (total weight) minus the water weight of 590 grams ($2268 \times .26 = 590$) gives you the dry weight of 1678 grams.

$1678 \times .05 = 83 \text{ grams}$

The difference is that our colored porcelain actually has 6.7% stain added. As you can see in this case, there is no harm done. Any way that you add the first color it will be subject to the color achieved and the color you want to achieve.

To darken/intensify your color - add more stain.

To lighten your color - add more clay.

If this is something that you want to replicate, you will want to keep good notes so that you will be able to repeat your color palette.

Following is my procedure to wedge the colorant into the clay. This is messy! Many of you will want to wear gloves when you do this!



5 lbs can be a lot to work with at one time. I divide the 5 lbs into 3 sections. The section to receive the color is pinched into a well (first photo - left). Water is added to the powder stain to keep the clay consistency workable. The moistened color is added into the well (middle photo). Pinch - fold and wedge until the color in this unit has achieved a uniform color (last photo - right).



Sandwich your colored clay unit between the two uncolored portions and wedge these together until the whole 5 lbs of clay becomes homogenous. Keep tightly wrapped in plastic for future use.



The colored clay bodies used for this class are all colored with 6.7% stain;

6020 Manganese-Alumina Pink

6376 Robin's Egg

6319 Lavender

6485 Titanium Yellow

6300 Mazarine Blue

6500 Sage Grey

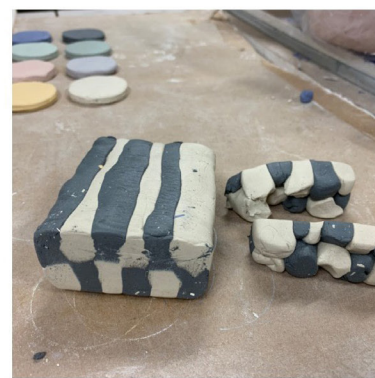
6600 Best Black

Base clay - Crystal Springs fired to ^6



Marbling is an easy and always unique way to incorporate colored clays. Even your leftover bits can be put to creative use in this manner.

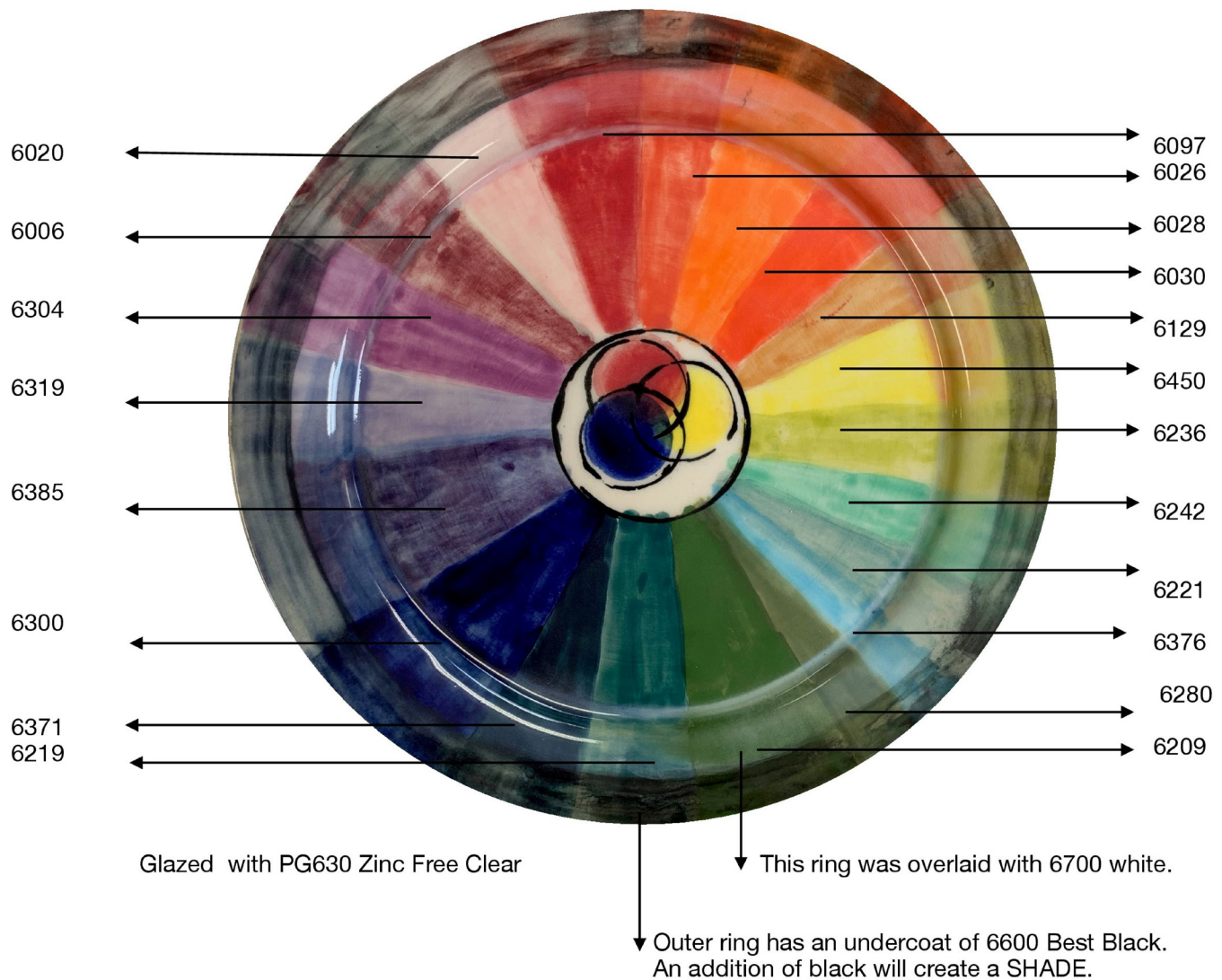
Design and Pattern with colored clay ...



Because your colored clay carries a greater expense, it's wise to make use of the natural clay body by inlaying your design onto it's surface with thin layers. Your colored clays should be thoroughly incorporated to stand out and make the best contrast against the base clay.



Crystal Springs fired to ^6 with our selection of colored clays. The vertical tube is original Gunmetal Grey, which was too intense of a color. I chose to marble it and dilute the color. Porcelain is vitreous and can be left unglazed (wet sand for silky surface). Our PG629 Super Clear fits it well!



Frequently Asked Questions:

What are Mason Stains®?

Blended and stabilized color oxides that have been sintered/calined to 3200°F. They offer controlled and repeatable results.

How are they Used?

To color glaze. For mixing with your own glaze formula, refer to the Mason Stain® chart in reference to the percent needed for each color. MOST importantly - reference the chemistry requirement needed to produce the color response you desire.

For mixing with a commercial glaze you also need to reference percent required, but calculate on dry weight by weighing liquid glaze x .60 = dry weight. Most liquid glazes are 40% water.

To color a Slip or Clay Body:

Check to see if the stain can be used as a body color. Percentage will generally start at 5%, although some colors are more intense.

If working from casting slip. weigh liquid x .65 = dry weight

If working from moist pugged clay, weigh clay x .75 = dry weight

To make an Oxide Wash:

1 ounce + ¼ teaspoon Gerstley Borate + 8 ounces Water + 2 teaspoons Amaco Gum Solution.

The color intensity as seen on the color wheel plate was created with washes with this formula. The need for more or less water is your choice. The Gerstley Borate aids in the melting. The Gum Solution allows the pigment to be brushed ... it is very "cranky" without it.