

MASON STAINS



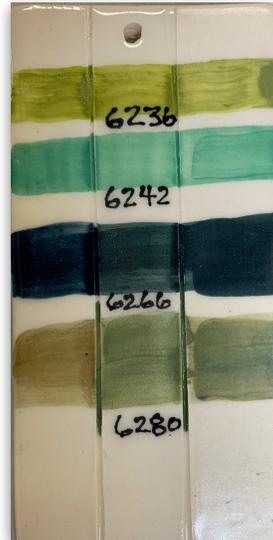
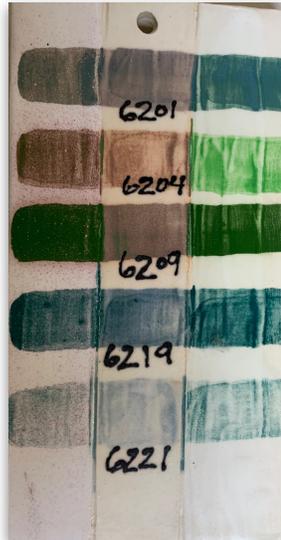
PG629 Super Clear	PG630 Zinc Free Clear	GS402 Transparent Satin
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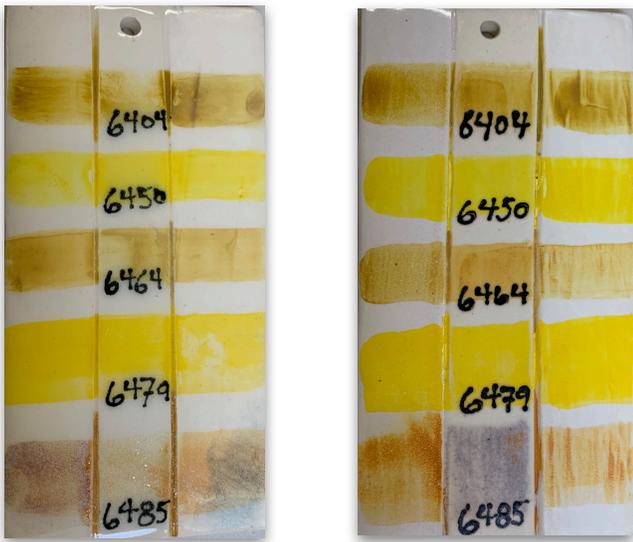
PG601 Perfect White	GLW12 Eggshell Wash	GS412 White Satin
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After learning to read the Mason Stain chart, we have taken all the Mason Stains that Georgies carries in stock and fired them under and over 6 of our unique ^6 glazes to aid you in their use. Each stain works with the chemistry of that glaze as an under-glaze color or a color over the top of the raw glaze "majolica" style. Some colors respond as expected, some color shift, others may disappear. You are given clues to the chemistry of some of our glazes Super clear contains zinc, Zinc Free clear does not contain zinc + 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 mixed 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 to your Mason Stain chart is a guide to each colors 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, it however brings a higher cost and can also enhance or alter your color response. Tin and Chrome partner to become your “pink” hues. Take note of 6201-6204-6209-6219-6221 tile, the over-majolica style tile. 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, they tend to be easily moved by a 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 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 brush ability. The easiest gum to use is Amaco’s Gum Solution.

How I mixed the wash you are using in class :

- 1 ounce sample package
- 1/4 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 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 . It can be used as design element under a glaze. A wash can be used as a “wipe - away” color on bisque to enhance texture.

This 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 straight forward. From you own formula, weigh each ingredient carefully.

The percent of Mason Stain colorant is added - over the top, i.e. if you're mixing 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 also including an opacifier.

- 100% dry glaze
- 5% Mason Stian
- 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 still 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 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 will 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 colorant.

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

Coloring a Slip Clay / Engobe:

The process for coloring a 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%.

$1305 \text{ gr} \times .36 = 469 \text{ gram}$

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

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

This is the amount in all the samples and the 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, you can simply cast it 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 we have to use. The 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, creating color with less intensity.



Your can directly 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 $\Delta 10$ grolleg body that also works well at $\Delta 6$. At $\Delta 6$ or $\Delta 10$ this body can be translucent and vitreous. The $\Delta 6$ glazes also will fit well on it 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 guide, the recommended percent of color is 5%. Once again, that was my intention, but reality took a turn. Ideally, you want to calculate the percent of color on dry weight, but in this case of our class colored bodies the percentage was calculated on the wet weight.

Here are the numbers:

5 lbs Crystal Springs Porcelain = 2268 grams

$2268 \text{ gr} \times .05 = 113 \text{ grams}$

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

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

5 lbs = 2268 grams (total weight) , minus a water weight of 590 gr ($2268 \times .26 = 590$) gives you a 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 first add color, it will be subject to the color achieved and the color you want to achieve.

To darken/ intensify your color you will add more stain.

To lighten your color add more clay.

If this is something you want to pursue, 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 to do this !



5 lbs can be a lot to work with at one time. I divide the 5 lbs up into 3 sections. The section to receive the color is pinched into a well. Water is added to the powdered color to keep the clay consistency workable. The motioned color is added into the well. Pinch - fold and wedge until that first unit has achieved a uniform color.



Sandwich your colored unit between the uncolored portions and wedged until your whole unit of clay has become homogenous. Keep well wrapped in plastic for future use.



The colored 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
-Crystal Springs fired to ^6



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

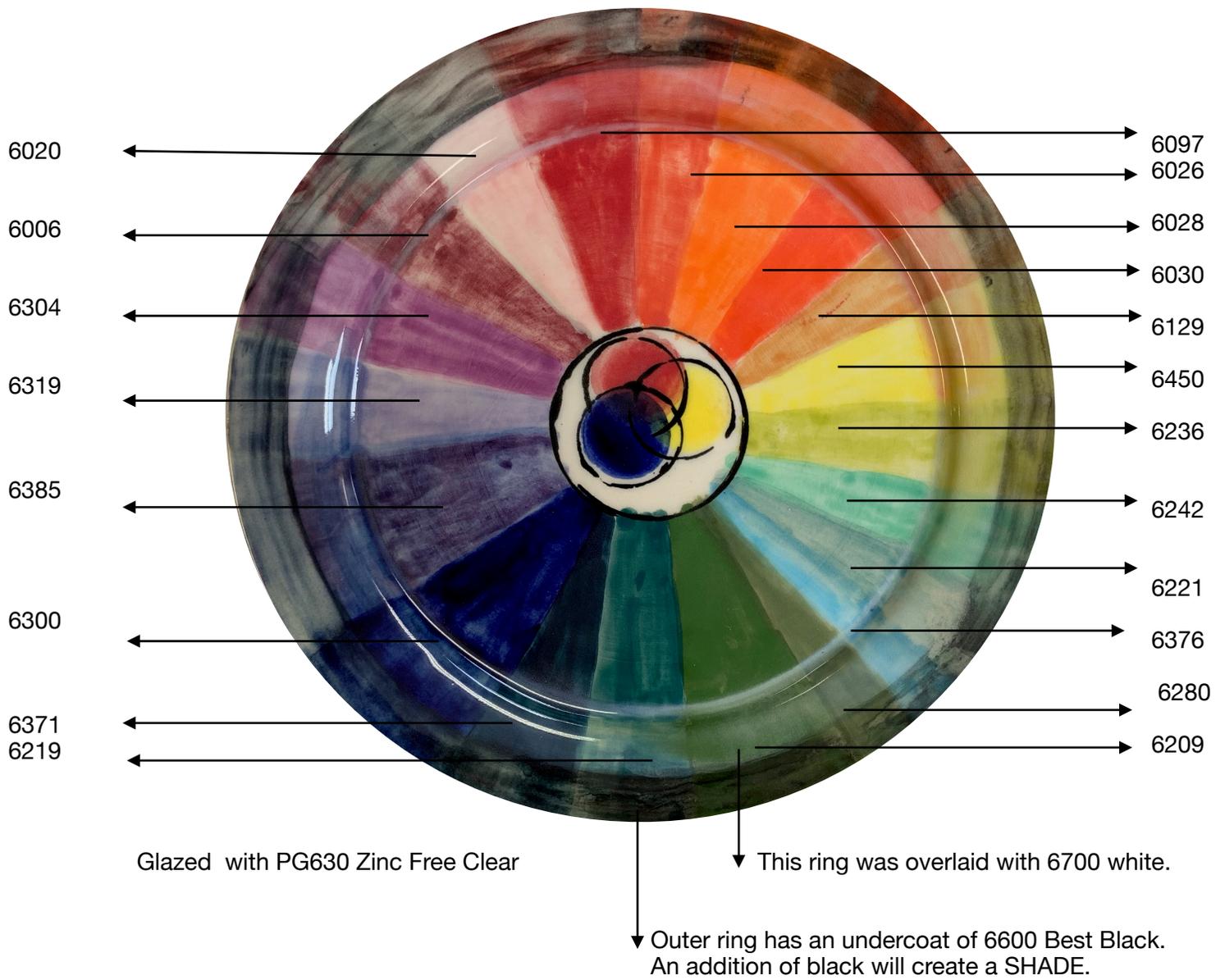
Design and Pattern with colored Clay



Because your colored clay carries a greater expense, it's wise to make use of the natural body by inlaying your design onto its surface with thin layers. You want to incorporate it as fully as



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



Frequently Asked Questions:

What are Mason stains?

Blended and stabilized color oxides that have been sintered/calced 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 chart in reference to percent needed per each color and 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:

Again. Check to see if 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 + 1/4 teaspoon Gerstley Borate + 8 oz water + 2 teaspoon Amaco Gum Solution.

The color intensity as seen on the color wheel plate was created with washes of the formula. The need for more or less water is your choice. The Gerstley Borate aids in the melt. The gum solution allows the pigment to be brushed, it's very "cranky" without it.