

Colorful Crystals & Clay

By Michael Harbridge

When I started doing ceramics 40 years ago, many unusual glazes and finishes existed that you simply don't see any longer. Raise your hand if you remember Dust Away colors. Utopia glazes, anyone? And how about those red glazes that rarely turned out unless you applied them perfectly! Reds have come a long way and are now easy to use. Dust Away colors are missed, but the dust they created probably was not the healthiest. And thank goodness Utopia glazes went away!

Now, who remembers crystal glazes? Back in the day, no macramé hanger was complete without chunky beads and matching pots with bright, colorful crystal glaze finishes. It was like magic in the kiln when these flowing, mysterious glazes erupted with color in the firing process. I think we had a different color frog scrubby holder for every day of the week. I know some of you are having flashbacks!

While crystal glazes have never entirely gone away, they've certainly made a resurgence recently. Over the past 40 years, many crystal finishes were discontinued. Ceramichrome (I'm dating myself here) introduced Jungle Gems, and artists thought they were the most amazing product. But it was new to the artists that were new to ceramics. I recall Mayco introducing Elements Chunkies, and suddenly they had invented this remarkable new line that could be combined with other products to give rich, flowing pottery finishes. It was a brilliant way to market, well, crystal glazes. Duncan recently added new neon crystal glazes. How appropriate is that! I remember all my neon clothes and coat back in the '80s, and it's come back in a big way. If only I had saved my neon parachute pants, I'd be back in style, somewhat.

So this month I'm focusing on crystal glaze finishes. They are a classic finish that keeps reinventing itself. By themselves they can give stunning results. Many can be combined with other finishes for unique, one-of-a-kind outcomes.

Let's talk first about what the colors actually are. Some believe the hard chunks of color inside a jar of crystal glaze are just bits of dried-up glaze. In reality, the crystals are glaze that has gone through a firing process. If they were just dry glaze, they would dissolve in the liquid base glaze. If you ever get the opportunity to tour the Mayco factory in Hilliard, Ohio, you'll get the opportunity to see the crystal-making process, where they heat large bowls of glaze that gets busted up, sorted by size, and stored in huge





Various types of glaze brushes.

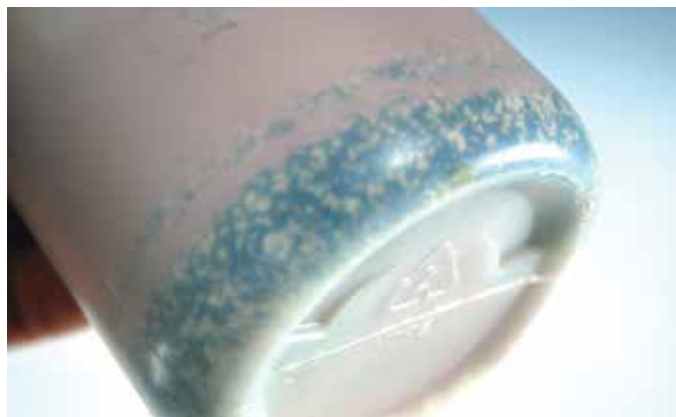
drums prior to packaging. Many crystals are combined with other colors to make the special blends required. Summarizing the process in this single paragraph is an understatement.

When these colors are packaged, the blend of crystals is usually added to the bottle first, followed by the base color of glaze. For this reason you will generally find the crystals clumped on the bottom of the jar. Even if the crystals get mixed in with the glaze, eventually many will settle to the bottom of the bottle. And while this may sound like a bad thing, it's not. Since most colors require multiple coats, the first coat(s) can be applied without the large crystals. If the crystals are applied in the initial coat(s), when subsequent coats are brushed on, the brush can actually knock off the crystals below. The final coat of glaze is when you want to apply the crystals.

Selecting a brush

What brushes work best with crystal glazes? I prefer to use fan brushes for large area coverage. But I find it's important to use the correct type of glaze brush. The big fluffy white coat hair brushes are not the best option. The full, fluffy badger fan brushes are also not one of my first choices. I recommend brushes that are not fluffy, for good reason. All those little specks of color and even the crystals themselves can get hung up in all those fluffy hairs, and then tend to magically appear when the brush is being used to apply a solid color of glaze.

Fan brushes like gold Taklon and hog bristle are my preferred choice. Since they don't have bulky bristles, they clean up easily and you can almost guarantee all the crystals and specks of color have been removed before moving onto the next color. They also work great for "patting" on the final layer of glaze with crystals.



The crystals have settled on the bottom of this bottle of color.

Your new jar of color

When I open a new jar of crystal glaze, I usually stir the top glaze and avoid going all the way down to the crystals. When I'm ready to apply the final coat, I dig down to the bottom and make sure the crystals get mixed into the glaze. Check the label for the recommended number of coats and apply the coats without crystals the same as you would other glazes. Attempting to shake a new jar of glaze and dislodge the crystals from the bottom can be a challenge. It's usually best to use a palette knife or brush handle to stir in the chunks.



Color Application

We've already covered the basic application method, but it's also important to note that you should avoid large applications of crystals near or on the bottom of shapes. Remember, crystals are glaze, so if you pile on heavy layers of crystals, you will get nice colors. But you can also get spots where the crystals will run. Large amounts near the bottom of ware can run and drip off the piece, causing bumps or drips on kiln shelves.

Are they food-safe?

Many crystal glazes are food-safe, but check the label for each individual color to be sure. Also verify compatibility with other glaze families if combining colors — for example, if you're glazing a vase or mug that requires glaze on the interior. Incompatibilities can cause items to split. You may also be able to layer various glazes, but check to be sure the colors are compatible.

Firing ranges

Most crystal glazes are low-fire products. However, most can also be high fired with success. Some will have color shifts or change completely. Many color manufacturers will list information about results of hotter firings on the label, within literature, or on their websites.

Crystal Pottery



Materials

Bisque by Bisque Imports
727 Vogue Vase
723 Amada Vase
273 Rim Server

Colors by Duncan

Cover Coat CC146 Purple
Artisan Glazes AG401
Marble Celadon

Concepts:

CN253 Black

CN083 Dark Wine
Crystal Glazes:
CR915 Night Frost
CR853 Sailor's Delight
CR854 Outer Space
CR909 Moss Green

Brushes by Royal & Langnickel

Z73FB-6 Zen fan
Z73FB-2/0 Zen fan
Z83W-1 Zen wash

Objectives

- Combine crystal glazes with other fired finishes
- Create the look of custom pottery

These shapes were all created using a variety of crystal finishes. Some are combined with colors like Stroke & Coat and Concepts on the lower section of the shapes, so it was unlikely the crystals would run and drip off the bottom. This is also a great way to use up odds and ends of colors.

Step 1: Begin with properly prepared 04 bisque shapes. Clean with a damp sponge to remove dust and moisten ware slightly.

Step 2: Apply colors as specified in the caption for each image.

Step 3: Stilt and fire to cone 06.

This shape was first coated with three coats of Marble Celadon, inside and out. Once dry, three coats of Moss Green were applied to the rim of the bowl and allowed to run down the side slightly on the interior.



This shape was first coated with three coats of Black. Once dry, one heavy application of Sailor's Delight was applied a few inches down from the top and allowed to run. One heavy coat of Night Frost was applied to the top section, slightly overlapping the Sailor's Delight, and allowed to run. The interior had one heavy coat of Night Frost applied.



This shape was first coated with three coats of Dark Wine. Once dry, one heavy application of Sailor's Delight was applied to the top and allowed to run. A small amount of Night Frost was applied in a random drip method, slightly overlapping the Sailor's Delight, and allowed to run. The interior had one heavy coat of Sailor's Delight applied.



This shape was first coated with three coats of Purple. Once dry, three coats of Marble Celadon was applied to the top half and allowed to run. One heavy coat of Outer Space was applied to the top section and allowed to run. The interior had one heavy coat of Outer Space applied.

3761 \$80
 Med. Sea Turtle
 12.75" L x 10.5" W x 3" H



3762 \$60
 Sm. Sea Turtle
 10.5" L
 8.75" W
 2.25" H



Turtles done in Mayco
 Stroke and Coat

3768 \$50
 Baby Tasha
 6.5" T x 4.75" W



3765 \$90
 Tasha Hedgehog
 10" T x 7.25" W

3746 \$90
 Hedge Hedgehog
 6" T x 9.5" W x 11" L
 Log Round
 2" T x 9.75" W



3759 \$75
 Rose Cottage
 6.75" T x 8.5" W



3771 \$50 (3)
 Gangbuster Tasha
 4.5" T x 3.25" W



3769 \$40
 Baby Hedge
 3.5" T
 6.25" L
 5.75" W



3652 \$45 (3)
 GB "Aster" Fairy
 3.5" T x 3" W



3747
 Log Round



3651 \$50 (3)
 GB "Iris" Fairy
 4.75" T x 3" W



3747
 Log Round



3770 \$40
 Bobby Bella Hedgehog
 4.25" T x 6" L x 4.75" W



3772 \$50 (3)
 Gangbuster Bella Hedgehog
 3" T x 4" L x 3.25" W



CLAY **Clay Magic** INC.
CERAMIC PRODUCTS

3764 \$128
Lg. Ghost
14.75" T
12" W

3765 \$85
Med. Ghost
11.25" T x 10.25" W

3152 \$50

Oak & Maple Leaves
5.25" - 3.5" L x 2-3" W

3253 \$98
Lg. Oblong
Whittled
Pumpkin
11.75" T
8.5" W



All ghosts are plain.
Boo and spider
designs are not
in molds.



3255 \$65
Sm. Whittled
Pumpkin
7" T x 6" W

3153 \$20
Acorns
1.5" T x 1" W



Color by
Mayco

3766 \$55 (2)
Pair of Ghosts
6.25" T
5" W

3767 \$55 (3)

3767 \$55 (3)
Gangbuster Ghost
3.75" T x 4.25" W

3766 \$55 (2)
Pair of Ghosts
5.75" T x 5.25" W

3763 \$128

Giant Spider
5.75" T x 14.5" W x 9.5" L





Objectives

- Create clay spheres with coils
- Work with crystal glazes in various colors

Crystal Galaxy Spheres

Duncan was looking for something unique to showcase its crystal glazes in its booth at the NCECA conference in March. Clay artists are always intrigued by these sphere shapes made with coils, and I felt this was the perfect way to show off many of the colors on one project. Throwing a round shape isn't an easy task, so the shape alone gets artists to look. Then, most look at all the openings of the coils and try to figure out how all the spaces were cut out.

Step 1: For each sphere you wish to make, dust out the interior of the Bisque Puzzler Mold, removing any dust or debris in the cavity.

Step 2: Follow the basic steps (provided with the tool) for loading and using your clay extruder. Extrude strands of clay into each half of the mold cavity, filling in as much as desired. Keep in mind that large openings between clay strands will make the item more fragile. Extrude extra coils of clay along the bottom area in the

mold to add strength to the clay creation. Do not go past the seam line where the mold halves will meet. Excessive clay between these parts will not allow the mold to fit together properly.

Step 4: Press a paper towel over the entire clay surface, forcing the clay coils together.

Step 5: Create a coil of clay the same thickness of the coils used in the mold and begin attaching it along the seam line of one half of the mold. This continuous coil will go up and down (attaching to one half of the mold at this time) and will result in loops going above the seam line about an inch and then about an inch below the seam line, attaching to the extruded clay in the cavity. Do not make the loops going above the seam line more than an inch high. Excessively high loops will tend to break off in the next step. Continue with these loops all the way around the mold (on one half only), avoiding the opening where you reach inside.



Step 6: Gently bend the loop coils inward slightly so when the mold halves are placed together, they will not get caught or crushed. Lift the half of the mold without the coil loops and turn it over slowly, making certain the clay is stuck to the mold and will not fall out when completely turned over. If the clay appears to want to fall out, drip a small amount of water between the clay and the mold in a few spots and press the clay into the mold.

Step 7: Place the mold halves together and wrap the Velcro strap around the mold, securing the two halves tightly.

Step 8: Stand the mold up and reach inside with the press tool. Use the tool to press the clay loops at the seam so that they attach to the clay on both sides of the mold.

Step 9: Remove the Velcro strap and gently pry the mold halves apart. Do not force the mold parts if they do not come apart easily. Sometimes the molds will need to sit for a while, allowing the clay to firm up, before the mold will come apart with ease. Forcing the mold open could cause the piece to split.

Step 10: Once you have one part of the mold removed, you may need to let the clay sit in the other half until it's firm enough to stand on its own. Remove the other mold half when the piece can stand on its own.

Step 11: Place the clay globe on a flat surface with several layers of newspaper or on other absorbent material, like a small sheet of drywall. Allow to dry completely (about a week). Place the globe on top of a firing kiln after one week to make sure you get all of the moisture out before firing to cone 04.

Step 12: Damp sponge the large bisque bowl to remove any dust. Press chunks of clay into the bowl. The harder you press, the less texture you'll have on the exterior of your bowl. The sample shown was not pressed hard. Cover the entire interior of the bowl.

Step 13: Drag your fingers across the clay chunks to attach them to each other. Use a metal rib to smooth the bowl interior, while not pressing so hard that you eliminate the texture on the exterior. Use a wet sponge to further smooth the interior.

Step 14: Allow the clay shape to dry completely inside the bisque bowl. Don't try to dry it too quickly; this could cause it to crack. Also, make certain the clay does not go around the edge of the bowl, because the clay will shrink as it dries and could crack.

Step 15: Remove the dry greenware bowl from the bisque and fire to cone 04.

Step 16: Damp sponge the bisque spheres and apply crystal glazes of choice to the exterior and interior of each sphere. The long handle of the Aurea brush will allow you to reach inside the small openings inside the spheres to apply glaze. The first two coats should be from the top of the bottle, without mixing in the crystals. Stir the color well to mix in the crystals for the final coat. Avoid placing too many crystals on the bottoms or even an inch up from the bottom. Heavy applications of crystals can run and drip in the kiln, or leave bumps on the bottom of the ware.



Materials

Low-Fire white clay by Continental Clay
Large bisque bowl of choice (used as form)

Bisque Puzzler Molds by ClayPuzzling

BP306 Extra Large Globe
BP307 Large Globe
BP308 Medium Globe
BP309 Small Globe
BP410 Mini Globe

Colors by Duncan

Concepts CN253 Black

Crystal Glazes:

CR915 Night Frost
CR853 Sailor's Delight
CR854 Outer Space
CR909 Moss Green

Tools by ClayPuzzling

PPT1 Press Tool
KI200 Industrial Hand Extruder

Tools & Brushes by Royal & Langnickel

RSET-POT1 Basic Tool Kit
R6565FB-8 Aurea fan

Miscellaneous

Washcloth
Paper towels
Newspaper



Step 17: Wipe the bowl with a damp sponge. Thin a couple ounces of Concepts Black 1:1 with water and apply to the back of the bowl using the Aurea fan. The stiff bristles and thinned color make it easy to get into all the crevices. Use a damp sponge to wipe back the Black, so it's only in the deep crevices. Apply three coats of Night Frost (or color of choice) to the interior of the bowl.

Step 18: Once all colors have dried, brush away any heavy concentrations of crystals near the bottom of the ware. Do this before you take the ware near your kiln — you don't want glaze crystals to fall on other items in the kiln or get into the elements. Stilt and fire all ware to cone 06.

Advanced Methods

This arrangement is ideal for making a water fountain. Add a small submersible pump with tubing going up to the top sphere, allowing water to flow down.

Michael Harbridge has been teaching fired-arts workshops for more than 35 years and is the educational arts manager for Royal & Langnickel Brush and the creator of clay puzzling. He can be contacted by mail at P.O. Box 108, Iola, WI 54945, by phone at 715-281-6450, or by e-mail at info@claypuzzling.com. Visit his website at www.claypuzzling.com.



Sources

Bisque Imports: www.bisqueimports.com
ClayPuzzling: www.claypuzzling.com
Continental Clay: www.continentalclay.com
Duncan: www.ilovetocreate.com
Royal & Langnickel Brush: www.royalbrush.com