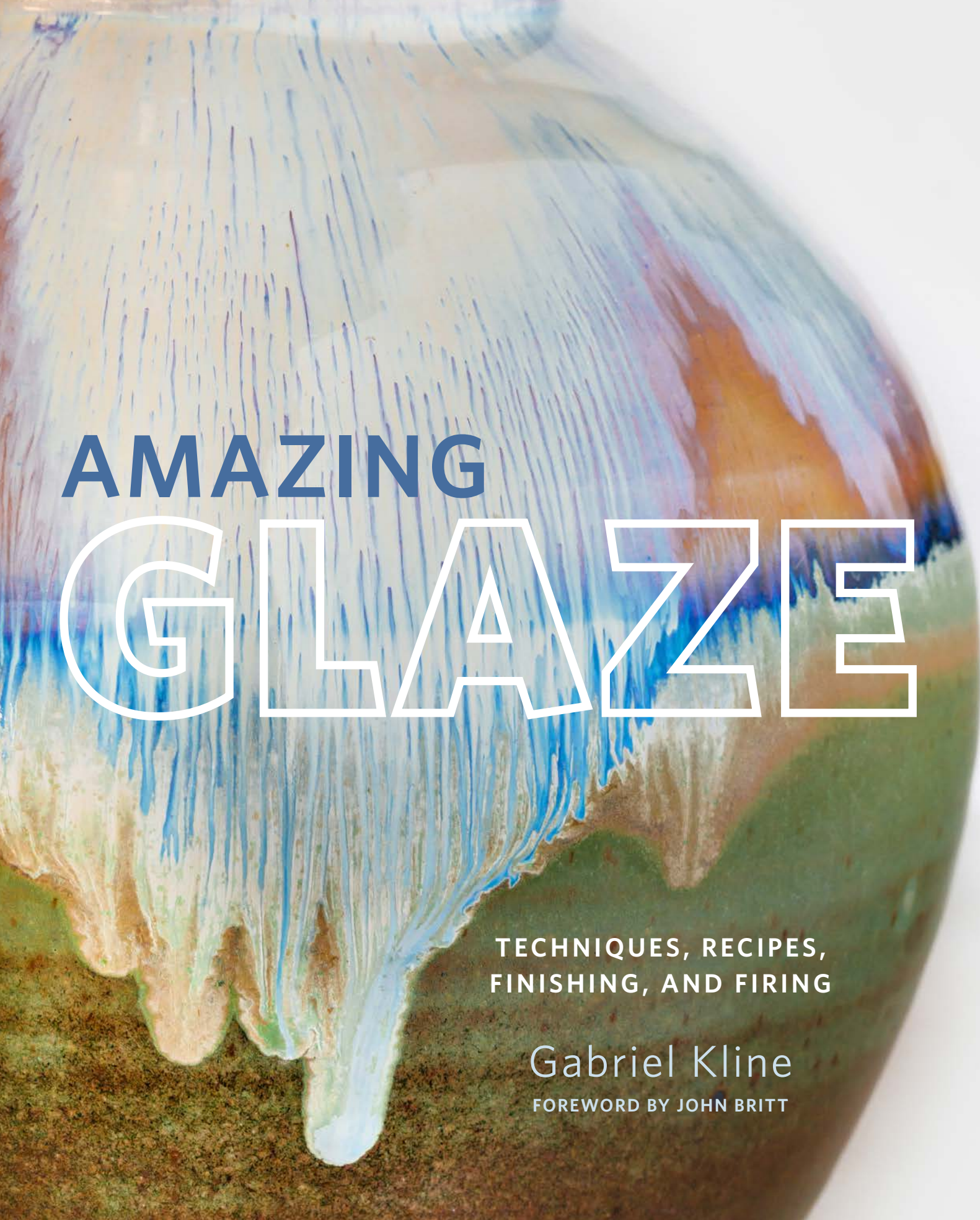




AMAZING

GLAZE

TECHNIQUES, RECIPES,
FINISHING, AND FIRING

Gabriel Kline

FOREWORD BY JOHN BRITT



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INTRODUCTION

For potters, opening a kiln is like witnessing magic. There's a moment when you can do no more than bask in the glittering, gleaming light of the pots on the top shelf, reflective with amazing glaze. After a good firing, we reveal the pieces in the kiln one by one, slowly, contemplating the subtleties and calling our friends over to take a look. As ceramic artists, we live for this moment. As humans, we're filled with joy when we create something beautiful.

On the other hand, a bad firing can ruin your day. The attempt to create something beautiful can seem a waste of time and effort when we fail. It leads to negativity as we question our competence, react with disgust, and use unprintable language to describe the results.

At Odyssey ClayWorks, in the mountains of Asheville, North Carolina, we have seen everything over the years—both the ecstasy and the agony. It has become our mission as an organization to eliminate as much of the latter as possible. We aim to equip our students with the information they need to make magic on a regular basis.

Amazing Glaze is the culmination of more than a decade of workshops, hundreds of classes, and thousands of firings. While it will serve as a great primer for those new to glazing, even the most experienced ceramic artist will find in it new techniques and recipes to try. In addition to providing the groundwork for setting up a successful glazing session, this book

will investigate a bit of the chemistry behind the scenes (don't worry, you won't need a new degree), dispel many glazing myths, and profile several contemporary artists making waves in the field. Last but not least, you'll find a selection of curated, thoroughly tested recipes to try out in your studio.

Rather than seeing glaze as an afterthought to the "more enjoyable" process of working with wet clay, we'll seek to discover the hidden pleasures of the act itself. While many beginning potters focus on form—and there's nothing wrong with that—glaze is an important and necessary part of ceramic art. It is the way we dynamically enhance the surfaces of our work. It is my goal to dispel the myth that glazing isn't fun. Let's infuse the process with a sense of adventure, levity, and wonder!

By the end of this book, you will have the knowledge you need to create stunning, repeatable results that will wow the crowd and have your studio mates begging for the secrets to your success. I encourage you to be daring and adventurous in your exploration of the materials and processes. Take detailed notes, make sure to try something new in each kiln you fire, and share the results with your fellow potters. Seek to make work that adds to the field of ceramics. It is my pleasure to accompany you on this journey.

Happy glazing!

—GABRIEL KLINE

Glazing can be every bit as rewarding as working with wet clay! The glaze combination shown here is Tundra Sunset, found on page 61.

GET READY TO GLAZE

I often refer to the glaze area of our studio as “the glaze kitchen.” While you should never bring food and drink into the glazing area, there’s a good reason for the name. The glazing area in any studio should be set up much like a commercial kitchen. You want clear staging areas and a flow that lets multiple people work without getting in one another’s way. The area should be designed with safety and efficiency in mind. In this chapter, we’ll cover how to set up a glaze area so that your workflow can be natural, with a focus on safety and minimal physical strain. We’ll also cover the tools necessary for glazing—and some fun extras!

Successful glazing also requires an understanding of what glaze is, how to work with glaze, and how to evaluate and test glazes. And of course, you’ll need to know how to read a glaze recipe. While expert glazers may find themselves on familiar ground, I still encourage you to browse the next few pages, as you may pick up some ideas or spot some best practices even if you’re a glazing veteran. It’s surprising just how few of us come up in studios that use hydrometers (page 18), for example. For those of you just getting started on your glazing journey, this chapter is a must-read. Let’s get cooking!

THE GLAZE KITCHEN

The very use of the word *kitchen* suggests that we are cooking something up. Indeed, let us think of the glazing process as preparing a visual feast on the surface of our work. In order to make glazing your work an enjoyable, easy, and efficient process, take measures to set up a glaze kitchen that reflects the natural flow of the glazing process. Just as a skilled chef moves gracefully and with no wasted motion in the kitchen, so too shall we learn to dance with our materials in the glaze kitchen. And while it may at first feel as if you have two left feet, you will soon be pirouetting your way to the kilns. (Think Fred Astaire and Ginger Rogers.)



SAFETY AND CONSCIOUS USE OF MATERIALS

Glaze myth #447: The creation of ceramic art has low impact on the environment.

Although potters and other ceramic artists have a reputation for being rather granola—that is, ecologically conscious hippies who love to play with earth—it is important to acknowledge that we are the original industrialists. For thousands of years, clay artists have mined raw materials from the earth, consumed other natural resources (including coal, natural gas, wood, and oil) to fire them, and released toxic chemicals, including carbon monoxide, in the process. I mention this not to dissuade you from working with clay, but to reframe the perception of the craft to acknowledge its environmental impact. When we begin to think in this way, our work becomes more ecologically conscious, focusing on responsible use of the materials and offsetting our consumption in other ways. There are many carbon offset programs that you can consider, such as Terra-Pass, which allows you to calculate the carbon footprint of your work with clay and donate funds accordingly to reduce greenhouse gases. I would like to encourage all ceramic artists to plant some trees, one way or another, at some point in their journey.

While it may seem somewhat of a buzzkill, it is vitally important to realize that in addition to the environmental impact of ceramic arts, many ceramic materials used in the glazing process can be dangerous to your health. Many are carcinogenic or otherwise dangerous with long-term exposure—including silica, which is present in all clay and glaze. Some are soluble (able to be dissolved in water and absorbed through the skin), and many, such as barium

Organizing glaze ingredients and using lidded containers are both key to safety in the glaze kitchen.

carbonate, are poisonous. Just 5 grams of barium carbonate is a lethal dose in humans.

However, you can use glaze materials safely with the following precautions:

- Always use an Occupational Safety and Health Administration (OSHA)–approved dust mask or respirator when you are measuring, transporting, or mixing dry materials.
- Avoid submerging your hand in glaze without wearing a latex or rubber glove. Many materials are soluble and can be absorbed through your skin.
- Store all dry materials in lidded containers. A gust of wind from an open door or even a fan in the studio can contaminate the air with harmful material.
- Immediately clean up any spills or splashes with water. To avoid creating a dust cloud, do not sweep up dry materials. Do not eat or smoke when handling these materials.

DEALING WITH WASTE

When you are cleaning up spills, washing tools, or rinsing off a glazed piece, it's tempting to dump waste glaze material down the sink and forget about it. In most cases, at some point down the line, those materials end up in rivers and streams and the water table. Some of these repositories may be sources of drinking water in your area, and removal would require additional energy on the part of the water treatment plant. My recommendation is to install (or to encourage your studio to install) a custom trap below the sinks to catch as much of this material as possible. As you can see, the trap is a large metal basin on wheels with a drainage pipe at the top. Waste material settles



The traps beneath our studio sinks help catch waste materials that would otherwise go down the drain.

at the bottom of the trap and can be periodically collected. There are a few possibilities for its disposal:

- Sieve the material through an 80-mesh screen and use it as a mystery glaze. The chemical composition of the glaze will be unknown, and will vary from cleaning to cleaning, but you just might end up with a glaze never before seen. It's worth a test before resorting to other options. This is our preferred method at Odyssey ClayWorks.
- You can fire the waste materials in a crucible in the kiln. To do this, you will need a thick-walled, high-fire clay canister. Fill it to one-third below the rim and fire to the glaze materials' maturing temperature. This will render the materials inert.
- The last option is the municipal landfill, but this disposal method risks runoff and reintroduction of the materials to the water table or surface water.



Glaze taxis make it much easier to move large buckets of glaze around the studio.

INTENTIONAL DESIGN FOR MAXIMUM EFFICIENCY

When you are designing your glaze kitchen, you may want to sketch it out first using an aerial view, as you would see in an architect's blueprint. Measure your space and draw a scaled-down plan that you can fill in. You will want space for a large worktable, room for your buckets and tools, and an area for dry material storage. Ideally the glaze kitchen will be separate from where you make your work, but it is possible to convert your clay workspace into your glaze kitchen. In my first studio, I worked out of the basement carport of my house. Once I had installed shelving, my kiln, and two wheels, there was no additional room for a separate glaze kitchen. So, I would set large bats on my wheel and on buckets to create a series of glazing stations. This worked well for a long time, and I could produce lovely work in

an unheated basement with no running water. Even if your situation is not ideal, you can still produce ceramic gems in it.

Major considerations for the glaze kitchen include proximity and transportation to the kilns, access to water, worktables at appropriate heights, and drainage. If your glazing area has a smooth path to the kilns, a solid ware cart with good-quality casters can save you dozens of trips to the kiln. Some carts are commercially made especially for ceramics, but I have found that baker's carts also work well and can often be found used at restaurant supply stores. If your kiln is far away from your workspace, or if you work at home and fire elsewhere, plastic bins filled with bubble wrap or old blankets can protect your ware during the trips. I have always been impressed with Josh Copus, a local wood-fire potter, whose studio is in Asheville. He uses the blanket technique to drive his greenware twenty miles on country roads to his wood kiln in Madison County. He first places his greenware pots on ware boards, then loads the ware boards directly into the back of his pickup truck. He drapes thick blankets on top of the ware to cushion and hold the pieces in place. This creates a surprisingly successful bracing system for the delicate pots; he experiences minimal loss, despite the long trip.

Note: Access to running water is helpful, not only to mix glazes and adjust consistency, but also for cleanup. If your studio doesn't have running water, filling a 5-gallon bucket with clean water serves the same purpose and can act as your sink. Before the advent of modern plumbing, a trip to the river or well was a necessary part of the daily routine of every pottery workshop. Make sure you have a good supply of clean water at the beginning of every glazing session. At the end of a session, thoroughly clean the work area with plenty of water.
