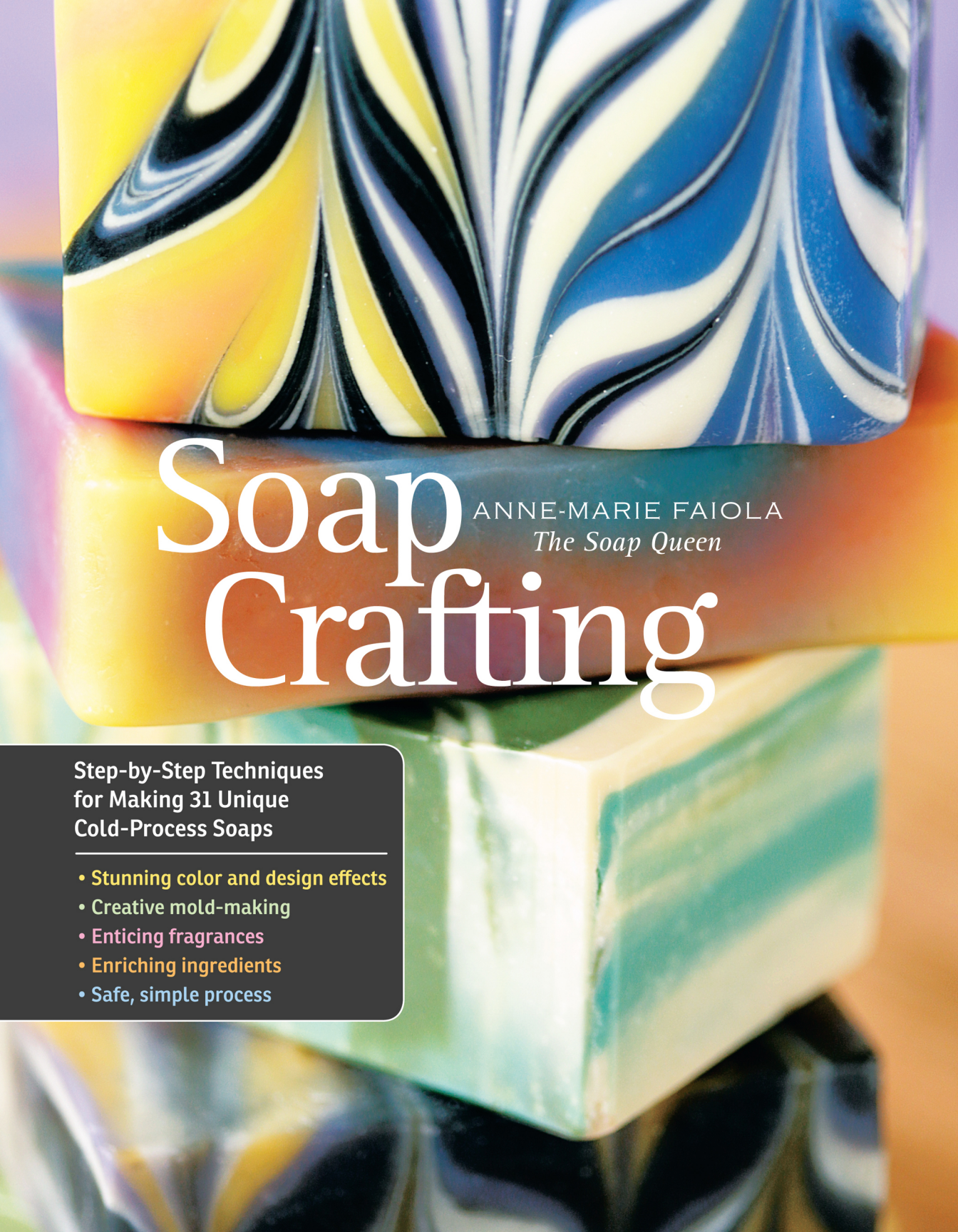
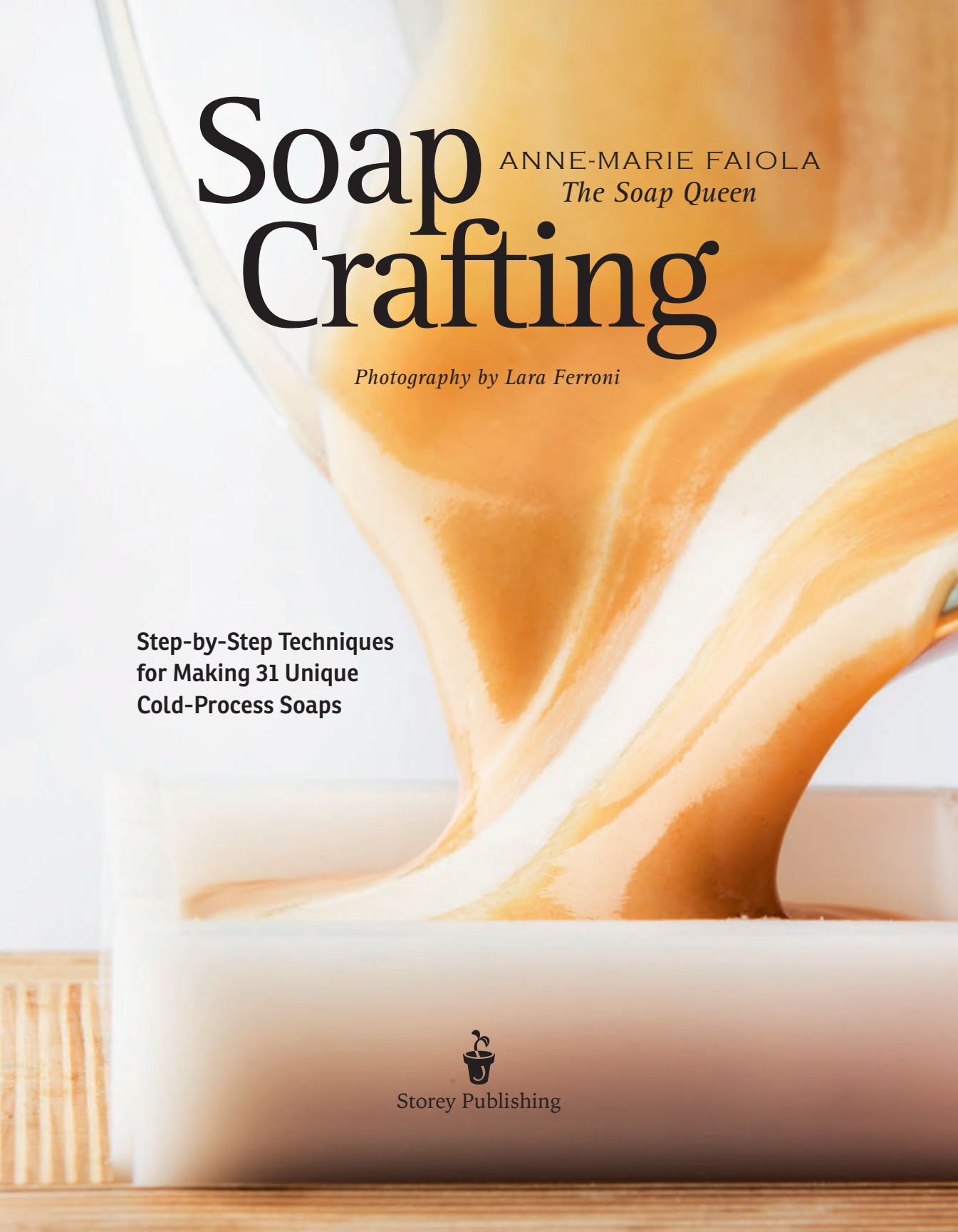

Soap Crafting
ANNE-MARIE FAIOLA
The Soap Queen
Step-by-Step Techniques for Making 31 Unique Cold-Process Soaps
• Stunning color and design effects
• Creative mold-making
• Enticing fragrances
• Enriching ingredients
• Safe, simple process



Soap Crafting

ANNE-MARIE FAIOLA
The Soap Queen

Photography by Lara Ferroni

Step-by-Step Techniques for Making 31 Unique Cold-Process Soaps

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Be sure to read all the instructions thoroughly before undertaking any of the projects in this book and follow all of the safety guidelines summarized on pages 14–15.

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This book is dedicated to my parents, Richard and Wenche Faiola. They taught me everything I needed to know about being a teenage entrepreneur, encouraged me to never limit my dreams, and were supportive even when I quit a stable fulltime job to sell handcrafted soap.

Soap Crafting would not have been possible without the support of my smart, funny, and exceedingly patient husband, Chris, who did more than his fair share of household duties while I was writing and testing recipes.

Finally, to my team at Bramble Berry: my days are more fulfilling with you in them. There is absolutely no way I could do a tenth of what I do without your support, your cheerleading, and your grounding. A special shout-out to my assistant Kristen who kept me organized throughout the writing, testing, retesting, and final photography process.

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Why Make Your Own Soap?

I HAVE ALWAYS BEEN A CRAFTY GIRL — rubber stamping, decoupage, or knitting, I love anything and everything DIY. When I was 16 years old, I purchased around $40 of really cool glycerin soap. When I got it home, I looked at it and thought, "Huh! I can make this!"

I set about backward engineering the soap. I could find only one book on making soap. AOL and dial-up were still the main ways to access the Internet, and there were no blogs, chat forums, or soapmaking support groups. The founders of YouTube were barely out of middle school.

Figuring out how to make soap both energized and absolutely frustrated me. My first five batches were failures. But I persevered and finally came up with a soap that not only looked okay, but smelled decent too. I grew up in a small town, and the local electric store was the de facto place to buy gifts (really — they had a bridal registry). I took my basket of soaps to them and asked to sell them my wares. Much to my delight, they started selling my soap.

The local gym soon followed, and my high school years were spent selling soap, breeding and selling Russian Dwarf Hamsters, and playing piano for a ballet studio. It was an eclectic mix of entrepreneurial endeavors but it was fun, and soap was just the creative outlet I needed.

I sold soap throughout college, and when it came time to admit that my chosen profession as a correctional officer was not a good fit, making soap and teaching others to make it was a natural next step. After 20 years, I still love everything about making soap.

I can almost guarantee that once you start using handcrafted soap, you won't go back to using the commercially manufactured kind that has detergent (which potentially strips your skin of essential moisture) as the main cleaning ingredient. When you make soap from scratch, you can select the best oils, the most luxurious butters, and the purest colorants. You can choose ingredients based on things that are important to you.

Love coconut milk? There's a soap formulation for that! Are you a moose hunter from Alaska? You can make soap with moose fat! Want to make a bright blue, pear-fragranced hand soap shaped like a butterfly? Not a problem!

You can add many different specialty ingredients to customize soaps for yourself, your family and friends, and your clients. If you know people with sensitive skin, you can formulate a soap just for them. If you can't stand animal products in soap, you can create soaps without animal products. If you want all of your soap to contain oatmeal, you can easily design recipes around oatmeal.

In addition to being practical, soapmaking is an art form. Whatever shape, size, color, or fragrance you can dream up, you can make a soap to match. Soapmaking involves most of the senses — smell, touch, sight, and sound (most of us will likely avoid the fifth sense, taste). Unlike art that sits on a wall, your

handcrafted creations can be used daily. Not only will your soap wash away dirt, but its artistic nature will nourish your soul at the same time.

My favorite reason to make handcrafted soap? It's fun! Soapmaking is a delightful hobby and makes a fantastic springboard for a small business. (Who doesn't love receiving soap as a gift?) It's a great creative outlet for anyone who enjoys colors, fragrances, and alchemy — the process of transforming something common into something special.

Thank you for investing the time to read my book. I hope that you find it inspiring and that it enables you to make perfect soap, each and every time.

Happy soaping!

Anne-Marie

P.S. If you can't get enough soap and soap projects, check out www.soapqueen.com, where I blog almost daily about soap, business, and family. And look for Soap Queen.TV on YouTube — I post new soap-making videos almost every month!

PART 1

Learn to Make Handcrafted Soap

CHAPTER 1

Soapmaking Techniques and Safety Guidelines

At its core, soapmaking is a science. Soap results from the chemical reaction that occurs when you combine a fatty acid (oil) with an alkaline substance (lye); the process is called **saponification**.

Because saponification involves caustic materials, safety precautions are critical. Please review the safety guidelines given in this chapter before starting your soapmaking journey.

Different Ways to Make Soap

There are a variety of soapmaking methods: the cold-process method, the melt-and-pour method, and the hot-process method are three of the most popular. This book deals primarily with the cold-process method, but once you've mastered that method you may have fun learning about the other options.

The Cold-Process Method

The cold-process method of making soap from scratch consists of mixing sodium hydroxide (lye) with water and then combining the lye-water solution with one or more oils until the mixture reaches a thin, pudding-like consistency in a process called **tracing**. At this point, you mix in colorants, fragrances, and any other additives, such as herbs or spices, and pour the traced soap into molds.

Once the soap has hardened (usually in two to three days), you can pop it out of the molds. You will have to continue drying and curing it for four to six weeks. As the soap cures, excess water evaporates and the lye and oil continue to react, making the soap milder and leaving you with an exceptionally skin-loving product.

DO NOT USE POTASSIUM HYDROXIDE

When purchasing the materials to make soap, be careful to buy sodium hydroxide, not potassium hydroxide. It's easy to mix them up, but they are entirely different. Using potassium hydroxide instead of sodium hydroxide will ruin your soap.

This method is called cold-process because it requires no outside heat source. Despite the name, however, there is heat generated during the process. When the lye is added to the water, the resulting exothermic (i.e., heat-producing) reaction can reach up to 200°F. That is warm enough to melt most solid oils that can be used in soapmaking; in fact, with most soapmaking techniques, the lye-water has to be set aside to allow it to cool before it is added to the oils.

Cold-process soaping is popular because you can choose recipes with whatever skin-safe ingredients you want. It does, however, have a couple of drawbacks. First, it deals with lye and so is not a suitable activity for children. Second, some soapers may get impatient with the drying and curing time.

Rebatching Soap

A variation of cold-process soapmaking is rebatching soap. With this method, you take shreds of cold-process soap, apply heat and some liquid, and turn the soap shreds into a new bar of soap. This method appeals to people who wish to use delicate

Shreds of cold-process soap

Rebatch soap

Melt-and-pour soap base

essential oils in an all-natural recipe. The high pH of fresh cold-process soap will often damage the delicate scent and properties of some exotic essential oils. Rebatch soap allows you to have all the goodness of cold-process soap without having to worry about the safety issues involved with handling lye. The resulting product has a more rustic, rough-hewn texture than traditional cold-process soap and intricate designs are more difficult to create.

The Melt-and-Pour Method

The melt-and-pour soapmaking method uses a premade soap base that melts easily. Most soapers melt the soap base in a microwave or a double boiler, though any gentle heat source — for example, a dual-temperature rice cooker — will do. Once the soap base is melted, you simply mix in colorants, fragrances, and other additives; stir well; and pour the mixture into the mold. As soon as the soap sets up (usually within an hour or two), it is ready to use.

Many soapers prefer the melt-and-pour technique because the clear or white base gives them many design options and because the end product does not need any curing or drying time. The premade base limits the choice of ingredients, but the 40 to 50 available formulations fit the vast majority of soapers' needs. Melt-and-pour soap is also a fun craft to make with children. Though it does not use lye, the soap base can get quite hot during the melting phase, so adult supervision is recommended.

The Hot-Process Method

The hot-process method of soapmaking is similar to the cold-process method in that you start from scratch, which allows you to choose from a wide range of ingredients, and you use lye. However, as the name implies, this method involves the application of heat. With the hot-process method, you either cook your soap on the stove in a large stainless-steel pot or bake it in the oven (keeping a close eye on it at all times) or use a slow cooker. Hot-process soap can be used immediately; however, without the 4- to 6-week curing and drying time used in the cold-process method, the bars are softer and do not last as long in the shower.

BASIC SOAPING VOCABULARY

Cold-process method. A soapmaking process that involves mixing a fixed oil or a combination of fixed oils, such as coconut oil, olive oil, and palm oil, with an alkali (in this case, sodium hydroxide, commonly known as "lye"). The resulting chemical reaction, saponification, turns the mixture into bar soap.

Essential oil. Oils that are extracted from natural elements, typically citrus peel, leaves, flowers, stems, bark, and herbs.

Fatty acids. A carboxylic acid that can be either saturated or unsaturated. An oil's fatty acid profile determines its performance in a bar. For example, palm oil is high in palmitic and oleic acids, which contribute to hardness and a creamy/stable lather.

Fixed oil. A nonvolatile oil of plant or animal origin, typically of a high fatty acid profile.

Fragrance oil. A synthetic blend of aroma chemicals and essential oils created specifically for its scent profile. While fragrance oils may contain natural elements, they are not considered natural ingredients.

Gel phase. A temperature phase that occurs during the soapmaking process. Once soap is poured into its mold, the chemical reaction of saponification causes temperatures to rise, resulting in a translucent look that turns a shiny opaque after it cools. To gel or not to gel is a matter of personal preference.

International Nomenclature of Cosmetic Ingredients (INCI). A standardized list of scientific names for nearly 20,000 ingredients used in cosmetics; maintained by the Personal Care Products Council. INCI names are the formal terms for ingredients that are used on labels.

Lye calculator. A tool, easily found online, used to calculate the amount of lye and water need to saponify the oils in your recipe, based on each oils' SAP value.

Lye discount (superfatting). To reduce the amount of lye by a certain percentage in order to leave unsaponified oils in a bar of soap for added skin-nourishing properties. The common discount (or superfat) rate is between 3 and 10 percent.

SAP (saponification) value. The amount of lye needed for fixed oils to saponify, or become soap. This number varies based on the fixed oil.

Saponification. The chemical process that results when a fixed oil or combination of fixed oils is mixed with an alkali such as sodium hydroxide (lye).

Sodium hydroxide (lye). A highly caustic alkali (NaOH) that when mixed with fixed oils causes saponification.

Superfat. See Lye discount.

Water discount. To reduce the amount of liquid called for in a soap recipe (typically by 5 to 15 percent), thereby lessening drying time. The higher the water discount, the more likely the soapmaker is to experience accelerated trace.

Safety Guidelines

Learning to make cold-process soap is a bit like learning how to cook, with one major exception: the safety precautions are more serious. One of the main ingredients in cold-process soap is sodium hydroxide (lye), a caustic material commonly used to clean drains, brine lutefisk, and, believe it or not, help make that nice crunchy crust on pretzels.

You can buy powdered, flaked, or beaded lye over the counter in many hardware stores and in the cleaning section of most big grocery stores. Typically, chemical supply stores or online vendors catering to soapmakers are more reliable sources. If you buy lye over the counter, make sure it is 97 to 99 percent pure and has no additives. Some popular drain cleaners have bits of aluminum added to them that are harmful to the soapmaking process. However you purchase your lye, you must treat it carefully.

Lye-water is cloudy when first mixed.

CHILDREN AND ANIMALS

Children and pets have no place in cold-process soapmaking. If you have small children, the safest place for them to be while you are making soap is out of the house. Fresh soap looks remarkably like cake batter, and little hands can be lightning fast when sugar appears to be involved.

As for animals, lock them outside or in another room. All it takes is one jump up on the counter to result in lye-water or fresh soap splatters all over you, your animal, and your countertops.

Keep your family and pets safe: make soap only with children and animals in another room or out of the house.

When you are making soap, it is important to take safety precautions. Here are the basics.

Protect your eyes. While your skin acts as a protective barrier on your body, your eyes have no such natural protection. Lye can cause permanent damage. Dry lye, lye-water, and fresh soap can all cause irreparable harm if they get into your eyes, so use goggles or a full facial mask at all times when working with lye or fresh soap batter. Eyeglasses are not adequate protection.

Wear gloves. Lye-water or fresh soap batter can sting, burn, or cause red welts if it comes into contact with your skin. The area underneath your fingernails is especially sensitive. Spilling lye or fresh soap on even minor wounds is extremely painful. I recommend wearing gloves not only during the soapmaking process but also during the cleanup process.

When making lye-water, always pour the lye crystals into the water; pouring water onto the lye could cause an explosion. And always pour the lye-water into the oils over a spoon, spatula, or stick-blender to avoid splashing.

Wear long sleeves and pants. Contact with lye-water or fresh soap will, at best, itch and irritate skin and, at worst, cause serious burns. Best practices involve wearing long sleeves and long pants during the entire soapmaking and cleanup process. And, of course, never make soap unless you're wearing closed-toe shoes.

Avoid all contact with aluminum. Aluminum will ruin your soap, but more important, it creates a danger to you. The reaction between aluminum and lye creates hydrogen, a highly flammable and explosive gas. Check your utensils and bowls carefully, and use only stainless steel, heat-safe plastic, or heat-safe glass for soapmaking.

Work in a properly ventilated area. You do not want to breathe in any lye fumes. Some soapers wear full face masks because they want extra protection or because they are particularly sensitive to lye fumes. If you are soaping in a kitchen, open the windows and run a fan. If you must make your soap in a small, enclosed space, mix the lye-water outdoors to avoid breathing the fumes. Working in a large, well-ventilated room and mixing at full arm's length is enough for me, but if your lungs feel irritated or you are coughing, it's time to add more ventilation or protection.

SAP Values and Lye Calculators

Every soap recipe calls for a certain, specific amount of lye. Determining how much lye to use with your recipe is simple if you have access to a computer. If you do not have a computer, you need to do some math. But don't worry, I'll teach you how to make the calculation by hand too.

Each oil has its own saponification (SAP) value. This is the amount of lye that is needed to turn 1 gram of that oil into soap. For example, the SAP value of coconut oil is commonly given as .178, meaning that it takes .178 gram of lye to turn 1 gram of coconut oil into soap.

Although SAP values for various oils have been calculated in grams, you can still use those values when your ingredients are measured in ounces. For example, to figure out how much lye you would need for a recipe containing 10 ounces of coconut oil, take the SAP value of coconut oil (.178) and do the math as follows:

10 ounces of coconut oil × .178 SAP value = 1.78 ounces of lye

When you look up SAP values on the Internet, you will often find a range. For example, you may find that the SAP value for coconut oil on different charts varies from .178 to .191. Picking a number safely in the middle of the range is a commonly accepted practice.

If you use the exact amount of lye that the SAP value calls for, the resulting soap will have zero percent "superfat," or unreacted oil. Most soapers choose to use slightly less lye than the recipe calls for in order to give their soap some degree of superfat. For example, if you use 5 percent less lye than the recipe calls for, your soap will have 5 percent superfat (also referred to as a "5 percent lye discount"). This extra oil moisturizes and nourishes the skin.

But you can have too much of a good thing: excess unreacted oil in your soap weighs down the lather and softens the bar. Additionally, the extra oil will go rancid sooner than the oil that has been turned into soap. Keeping your superfat to below 10 percent will ensure that your soap lathers well, lasts a reasonable amount of time in the shower, and has a long shelf life.

The Beauty of the Internet

If you would like to use a wide variety of oils, you can calculate your recipe by hand using the SAP values listed in chapter 4. Or you can say a thankful prayer that computers exist and find an online lye calculator. The following three soapmaking websites contain widely used calculators:

www.brambleberry.com
www.thesage.com
www.summerbeemeadow.com

The calculators all work a little bit differently, but the basic principles are the same.

- Decide on your recipe.
- Enter the amounts of the different oils you'd like to use (in ounces or grams).
- Enter the superfat, or lye discount, you'd like to use.
- Hit "Calculate."
- Watch in amazement as the math is done for you.

Some lye calculators will also give you a range for how much water you can use. If you use less than 100 percent of the water recommended, this is called a **water discount**. Soapers often use a water discount to shorten the drying process. The less water in the soap, the faster the soap

will harden. Discounting the amount of water in the recipe also reduces the time it takes for the water-lye-oil mixture to reach trace in your soap pot. For new soapers or those working with complicated designs such as swirls, this is not a positive thing: producing the trace quickly may not give you enough time to achieve the effects you want. The highest water discount you should use in any recipe is 50 percent, and if you discount that much, be prepared for a fast trace (or time from soap pot to mold).

TIP: Any time you make a new recipe, even if it is from a trusted source, run the recipe through a lye calculator just to be on the safe side.

EMERGENCY RESPONSE

SKIN. If you spill lye, lye-water, or fresh soap on any part of your body, rinse, rinse, rinse with cold water. And then rinse some more. Soap and water are your friends when mitigating chemical burns from lye.

If you spill a large amount of lye-water or fresh soap on yourself, strip out of your clothing and immediately jump in the shower. Rinse with cold water for 20 minutes, and then use soap and water to get the last of the lye off.

If you have red or painful skin after that, go to the emergency room.

EYES. If you get lye, lye-water, or fresh soap in your eyes, immediately flush them with running water. Remove any contact lenses and continue to flush your eyes with water for at least 20 minutes. Seek medical attention promptly.

THROAT. If you swallow lye, lye-water, or fresh soap, rinse your mouth and then drink one or two glasses of water. **Do not induce vomiting.** Seek immediate medical attention or call the American Association of Poison Control Centers at 800-222-1222.

Soapmaking Equipment

To make soap, you don't need much in the way of specialized equipment. Many of the things you need can come from your stock of common kitchen utensils. The most frequent question I hear about equipment is, "Can I use this for food after I make soap with it?"

The good news is that in some cases, you can. The bad news is that in other cases, you cannot. Most important, you should *never*, *ever* put food in any container in which you have measured lye or mixed lye and water. Never put food in any bowl that has contained fresh soap batter, either, and you should not touch food with any utensils (including the stick blender) you have used to mix that batter. Equipment that was not used for lye-water or fresh soap batter, such as mixing bowls or measuring spoons, can be used for cooking after it has been cleaned thoroughly.

Essential Equipment

If you have extra cash on hand for crafting, or if you plan on starting a business to sell your soap, you may choose to invest in a separate set of everything. Otherwise, it's okay initially to be frugal.

Here is what you'll need to get started in soapmaking.

Cardboard or newspaper. If you're not working in a dedicated soap lab, use cardboard or several layers of newspaper to cover your entire work area and absorb spills. You might also want a layer of plastic underneath to protect wooden surfaces. Lye-water and fresh soap batter can ruin wood; a bit of preventive covering, especially if you're soaping in your kitchen, can save you some heartache and clean-up time.

KEEP IT CLEAN

If you must reuse a soapmaking utensil or container for food, clean it out exceedingly well first. Rinse it thoroughly under lots of warm water in the kitchen sink; after it's clean, run it through a dishwasher. Never put unrinsed soap equipment in the dishwasher. The soap bubbles will overwhelm your dishwasher and foam out all over the floor.

Keep in mind that all plastic containers, as well as older heat-safe glass containers that are scratched or worn, will take on the scent of soapmaking fragrances or essential oils (thereby ruining the smell and taste of any food that is subsequently stored or cooked in those containers).

Heat-resistant containers and measuring pitchers are used for lye-water, heating oils, and mixing soap ingredients.

Heat-resistant bowls. For mixing soap ingredients, you can use containers made of stainless steel, tempered glass, or high-density, heat-safe plastic. (Avoid aluminum, tin, iron, and Teflon-coated containers.) At each step, choose bowls large enough to hold the full volume of lye-water, oil, and additives with plenty of room to spare; you never want a bowl to be more than two-thirds full. You'll need a variety of sizes based on your final batch, but the most common ones used for many recipes are 2-, 4-, and 5-quart mixing containers.

Heat-resistant measuring pitcher. Lye and water create an exothermic reaction that can reach 200°F. While you should always mix the lye and water over a sink, it's important to choose a measuring pitcher that can withstand high temperatures. If you choose a plastic container, make sure it is thoroughly heatproof. The most useful sizes when you're just starting out are 2- and 4-quart containers with handles and a pouring lip.

TIP: When you are ready to invest in a full soap kitchen's worth of separate equipment, check out secondhand shops and thrift stores. They are fantastic sources for glassware, utensils, and more.

Heat-resistant mixing utensils. Stainless steel is the best material, but heavy-duty rubber or silicone also works. Don't use wooden utensils — they will degrade over time, leaving splinters in your soap. At a minimum, you will need one long-handled spoon to mix the lye-water and several stainless-steel teaspoons and tablespoons to measure ingredients. It's also useful to have several sizes of heat-resistant spatulas on hand for scraping out bowls when pouring your soap mixture.

Measuring cups and spoons. A standard set of plastic or stainless steel (not aluminum) measuring cups and spoons will serve most of your soapmaking needs. Having two extra teaspoons or tablespoons for every recipe is also helpful for stirring in additives or fragrance.

Rubber gloves. Gloves help protect your skin from any lye-water or fresh soap batter spills. You can use ordinary rubber kitchen gloves or disposable ones (latex, nitrile, rubber, vinyl, and neoprene are all acceptable). In addition to protecting your hands, always wear long sleeves, long pants, and closed toe shoes. An apron is nice to protect clothing from splatters or spills.

CAUTION

Once you use a measuring bowl, either glass or plastic, to mix lye-water, you cannot use it for food or beverage preparation. Whether you dabble in soap production once in a while or make a batch every three days, you must have a dedicated lye-water container that is stored apart from food preparation areas. Always clean your lye-water container between uses.

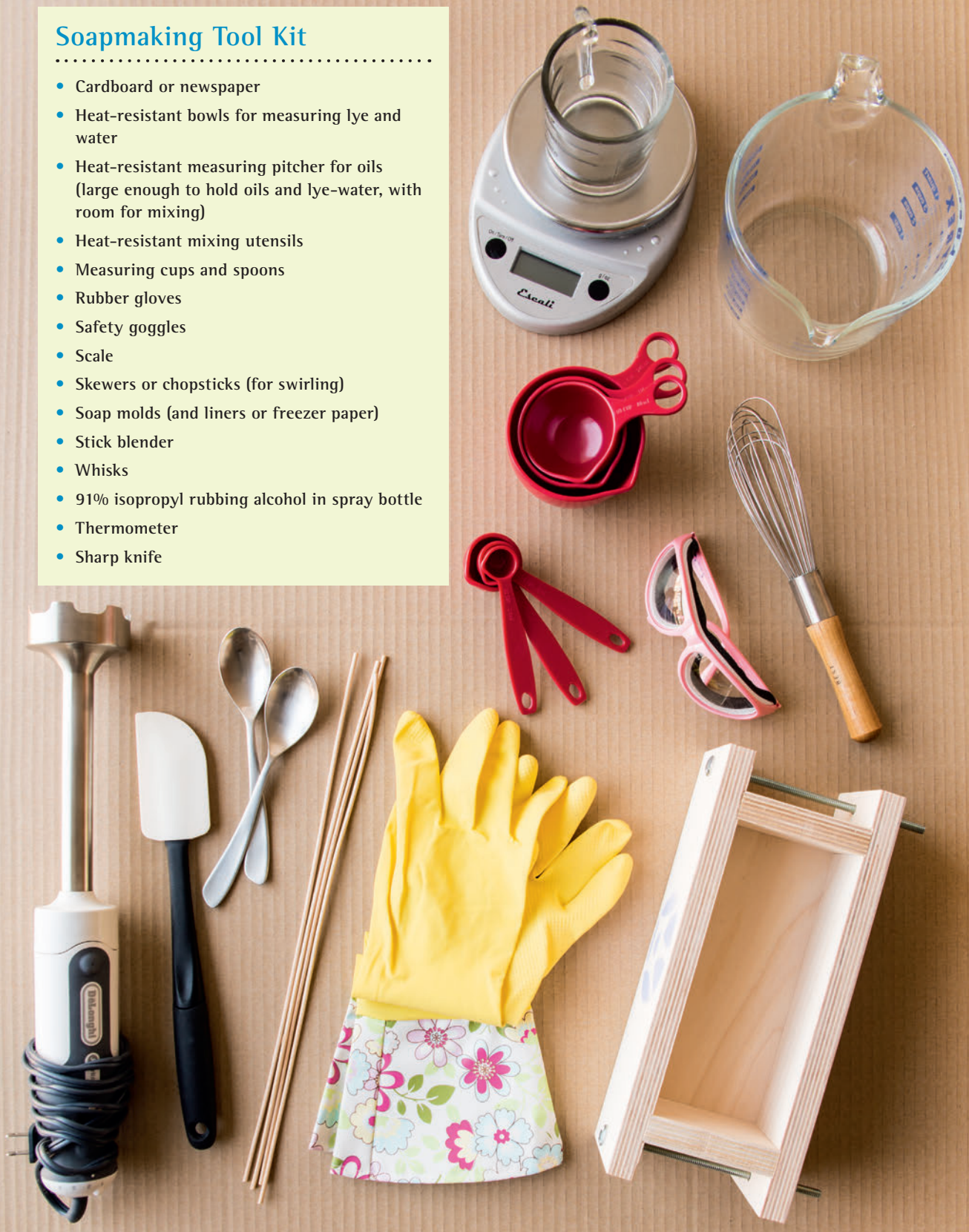
Safety goggles. Whenever you make cold-process soap, you need to wear goggles to protect your eyes from the caustic lye and freshly made soap batter. Eyeglasses are not sufficient protection. You only get one set of eyes. Invest in a good set of goggles to keep your eyes safe. You can find goggles, as well as full face masks, at hardware stores and chemical supply houses as well as online.

Scale. You can get by with an inexpensive dieter's scale, but a digital scale (think postal scale) is best for accuracy. Digital scales start at around $20 and increase in price according to their level of accuracy and maximum weight. You will need to

Measuring cups and scale

Soapmaking Tool Kit

- Cardboard or newspaper
- Heat-resistant bowls for measuring lye and water
- Heat-resistant measuring pitcher for oils (large enough to hold oils and lye-water, with room for mixing)
- Heat-resistant mixing utensils
- Measuring cups and spoons
- Rubber gloves
- Safety goggles
- Scale
- Skewers or chopsticks (for swirling)
- Soap molds (and liners or freezer paper)
- Stick blender
- Whisks
- 91% isopropyl rubbing alcohol in spray bottle
- Thermometer
- Sharp knife



WEIGHT VERSUS VOLUME

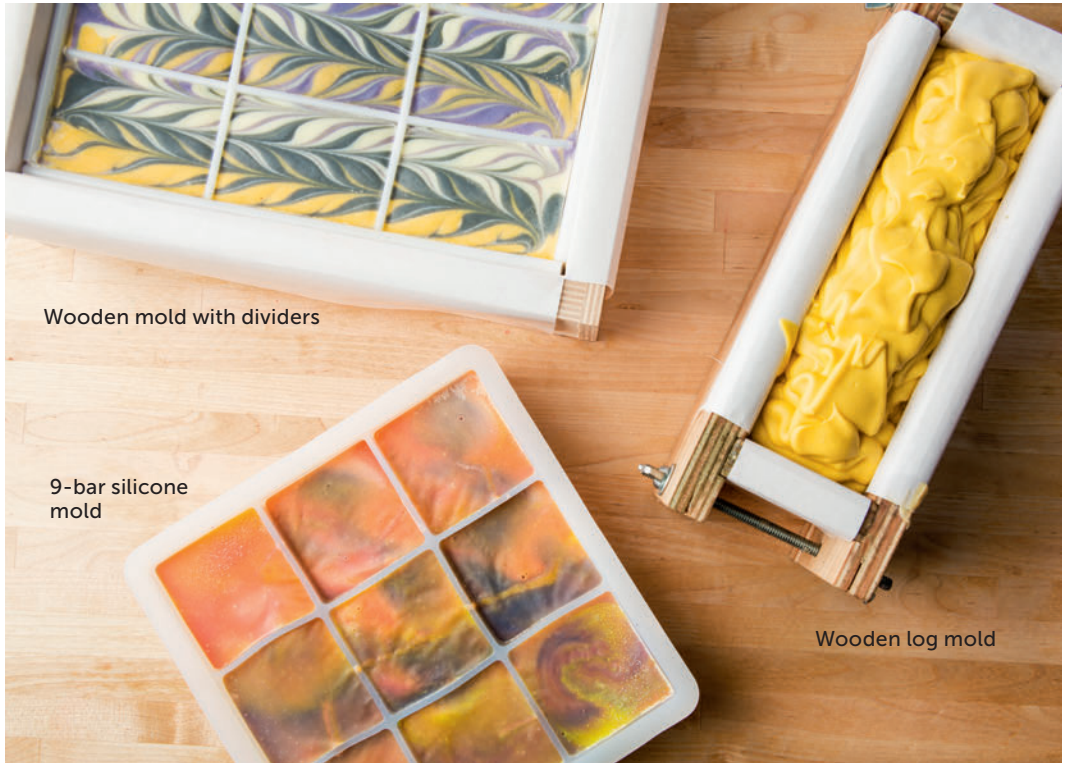
All soapmaking recipes list ingredients measured by weight, not volume. I could give you a long, complicated explanation about specific gravity, but, in a nutshell, oil is lighter than water. This means that 1 ounce of oil as marked by a measuring cup does not actually weigh 1 ounce. To be perfectly precise and ensure that all your batches are a success, weigh all of your ingredients, every time.

Note: Whenever you weigh an ingredient, note the weight of the empty bowl first and subtract that amount (the tare) from the total.

weigh the ingredients for each and every recipe, every single time. Measuring by volume only is not accurate enough for cold-process soapmaking. All the recipes in this book list ingredients measured by weight.

Skewers or chopsticks. When you are ready to attempt advanced techniques such as swirling, a stainless steel or plastic skewer or chopstick will serve as a swirl tool to help you make clearly defined lines. Some recipes might use unusual swirling tools, such as hangers, wooden dowels, or hair picks. Don't be surprised as you venture into your soapmaking journey if you start to see potential swirl tools everywhere.

Soap molds. You have many options here: beverage cartons, shoeboxes lined with freezer paper, and plastic food



containers are a cheap way to start out, but you can also invest in multi-cavity plastic or silicone molds designed for soap and/or a wooden soapmaking mold. **Note:** A wooden mold must be lined for every batch or it will be ruined. You can cut freezer paper to fit (shiny side facing the soap) or purchase a liner to fit a particular mold.

While you can use food storage containers such as those made by Tupperware or Rubbermaid, they tend to suction up air and make it harder to release the soap. As long as the potential mold is not made of glass or aluminum, and has some flex to it that allows the soap to easily release, you can use any number of common household items (kitchen drawer dividers are a favorite).

TIP: Do not use glass containers for molds; they will not release the soap easily.

Stick blender. While it is possible to use a whisk or an egg beater to bring your soap to trace (the stage where it's ready to pour), using a stick blender is quicker, easier, and more consistent. Using a stick blender takes minutes versus hours. I mean that literally: if you mix by hand, don't be surprised if your recipe takes more than an hour to trace. A stick blender is the soaper's best friend. It's worth the investment to buy a separate one just for soapmaking.

Knife. A sharp knife is essential for cutting up soap, either to embed in larger batches to add color and contrast, or to cut up the loaf. Do not use a serrated knife, because the toothed blade makes drag marks in the soap.

Whisks (several). Whisks come in handy for keeping a nice loose trace during soapmaking, allowing you to work with your raw soap batter for longer or, at the end, to make texture and peaks on your soap. You can use any heat-safe whisks (including silicone) so long as they are not made of aluminum or coated with Teflon.

AVOID ALUMINUM

Never use aluminum containers or utensils at any stage of the soapmaking process. Sodium hydroxide reacts with aluminum to produce hydrogen, which is extremely flammable. Lye will corrode tin, iron, and Teflon-coated containers, so avoid those as well.

Thermometer. Traditional soapmakers recommend keeping the lye-water and oils within 10°F of each other to create a more stable and even emulsification (i.e., the mixing of two liquids, such as oil and water, that do not normally mix well). For beginner soapmakers, I agree. In addition, many soapmakers like to keep their lye-water and oils below 120°F to ensure an even final texture. A digital model is more of an investment than an analog model but infinitely easier to use.

91% isopropyl rubbing alcohol. Spritzing your newly poured soap with 91% isopropyl rubbing alcohol is an optional step that helps prevent the light, white dusting of soda ash that can form on some soap formulations as they set. Note that alcohol with 91 percent purity is different from most standard rubbing alcohol, but the two types are normally next to one another in the pharmacy section of many grocery stores. You'll need to pour the alcohol into a bottle with a spray attachment. You do not need to have 91% rubbing alcohol to make soap. It's just a nice finishing touch to help colors remain bright and texture remain smooth.

Useful Extras

Cheese grater. If you have a soap batch that goes awry, in most cases you can grate the soap up and rebatch it (see page 11). Or

you can add fun texture and color to your cold-process soap (think "Confetti!") by grating up premade soap chunks.

Funnel. You'll need a medium-sized funnel for the advanced funnel-pour technique; a regular plastic one is fine.

Little glass or plastic bowls. Having lots of little bowls handy allows you to pre-measure additives (colorants, fragrances, herbs, salts, and so on). Premeasuring will help you keep your workspace organized and cut down on chaos.

Mini-mixer. A mini-mixer makes mixing colors much easier. While you can hand stir with a small whisk, having a battery powered mini-mixer makes the job faster and more efficient. You can find mini-mixers at most kitchen supply stores; they are often used for frothing milk in lattes. A mini-mixer is not the same as a stick blender, and they have different purposes in soapmaking.

Plastic condiment bottles. Plastic squeeze bottles (the kind often used for condiments like ketchup and mustard) are ideal for creating bars of soap with different colors or textures, for multicolored layering, and for adding swirling details (think Jackson Pollock). If you're not using brand-new condiment bottles, be sure to clean them thoroughly with soap and rinse well with warm water.

Potato peeler. You can use a potato peeler to make soap curls, either to embed in your soap or to stick on top of your soap for interest.

Mesh tea ball. A fine mesh tea ball is useful for sprinkling mica or other pigments on the surface of soap for a decorative touch.

Soap beveller. A soap beveller makes trimming edges of bars easy and efficient. It's the perfect touch that really makes your soap look finished and professional. There are many variations of soap bevellers on the marketplace. They typically have a razor blade (or two) and a slot to guide the soap evenly over the blade(s) to shave the edges from square or rectangle bars.

Spice or coffee grinder. Adding ground oatmeal, coffee, or herbs creates a bar of soap that gently exfoliates skin or just has a nice texture.

Setting Up Your Workspace

If you are soaping in your kitchen, take some extra time to set your materials up properly to ensure that your food products and soap products do not intermingle. First, arrange to have an uninterrupted 90 minutes to prep, soap, and clean up. Then cover your workspace with cardboard or newspaper to protect countertops, lay out your equipment, and review your recipe. Mentally go over where you will put the dirty soap dishes and the poured soap, and ensure that you have enough space. Finally, open the windows or turn on the fan for better ventilation.

Cleanup

Once you are done soaping, cleanup is a breeze. With your gloves and goggles still on, wipe out your soap dishes with paper towels. Throw out the used paper towels. Run superhot water in your sink to wash away the soap oils. Use a detergent-based soap designed for cutting grease to do the final wash on the soap dishes. As soon as you dry the dishes, put them away, and tidy up the area. Your kitchen is once again ready for making food.

CHAPTER 3

Making a Basic Cold-Process Batch: A Tutorial

If you're anything like me, you want to dive right in to something new and then figure out the details later. If so, this section is for you. If not? There are more details, techniques, colors, and fragrance options in the next couple of chapters, so read those first and then come back and give this tutorial a try.

Do, Re, Me: Easy as 1, 2, 3

This is a plain recipe with simple ingredients. It makes a batch of well-balanced unscented soap. It's good to get an uncomplicated recipe under your belt before moving on to the more complicated ones in the rest of the book.

This soap fits well into most 32-ounce (1-quart) beverage containers (e.g., waxed cardboard milk or juice containers). I like this recipe because it's simple, the materials cost less than $10, and it reuses a container that would otherwise be thrown out. (Bonus: No investing in a mold for your new hobby — yet!)

Approximately 8 bars

Lye-Water Amounts

3.0 ounces sodium hydroxide (lye)
7.26 ounces distilled water

Base Ingredient Amounts

4.0 ounces palm oil
4.0 ounces coconut oil
14.0 ounces olive oil

Equipment

Standard equipment (see list on page 21)
32-ounce waxed cardboard beverage container for a mold

SOAP SAFELY!

- **Work in a well-ventilated area. Do not breathe any fumes!**
- **Wear long sleeves, long pants, and closed-toe shoes.**
- **Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.**
- **Keep children and pets away from your workspace.**

Prepare the mold. Thoroughly clean and dry the container. Cut off one long side of the container — it's easier to pour the soap batter into the container if the top and bottom are intact.

Make the Soap Mixture

1 **Make the lye-water.** Put on your safety gear (gloves and goggles), then weigh out the water in a heatproof container. Weigh out the lye in another container. Slowly pour the lye into the water (doing it the other way can cause a volcanic reaction), stirring gently.

Add lye to water and stir. Water will be cloudy at first but will become clear.

TIP: Always read every recipe thoroughly before beginning to make soap.

Measuring Semisolid Oils

Semisolid oils such as coconut oil and palm oil weigh the same whether liquid or solid. An easy way to measure them is to melt them on low heat in the microwave, if their original containers are heat safe, and then pour out the required amount.

Note that you *must* use this method with palm oil, which has to be thoroughly mixed before being measured in order to combine all the constituents that you want to include in your soap.

2 **Set the lye-water aside** to cool down. You'll know it's ready to use when it has gone from cloudy to clear.

3 **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the olive oil and stir to combine.

4 **Take the temperature** of the lye-water and the oils. Generally, you want them to both be at 140°F or below. Many soapers like to keep their soap within a certain temperature range to ensure a certain final texture. My personal preference is around 120°F, but soapers have differing opinions on the perfect temperature range.

Melting oils in microwave

5 **Slowly pour the lye-water** into the oils. You'll notice a distinct separation between the two liquids.

TIP: Always pour the lye-water into the oils over a spoon or spatula, or along the shaft of the stick-blender. This reduces splashing and the possibility of introducing air bubbles into the mixture. Once you've poured, tap the stick-blender against the bottom of the bowl to release any trapped air.

6 **Put the stick blender** to the bottom of the bowl and tap it to release any air bubbles trapped in the blades. **Do not turn on the stick blender until it is fully immersed.**

With the stick blender on the bottom of the bowl, pulse it at high speed, mixing the lye-water and the oils (6a) until you reach thin trace; at this point the batter will have the consistency of a melted milkshake, and a line of the batter that is drizzled onto the surface will stick around for a few seconds (6b).

This should take just 1 to 2 minutes, depending on the power of your stick blender, how aggressively you're blending, and the temperature you started soaping at. If you overblend, the soap will thicken so much that it will be difficult to pour into the molds. Once you've reached thin- to medium-pudding trace, you have 2 to 3 minutes to pour the soap into the mold before it fully sets up.

Pouring lye-water into the oils

Blending the oils and lye-water

Soap at thin-pudding trace

Pour the Soap Mixture

7 **Pour the fully traced soap** into the milk container.

8 **Set the mold in a quiet spot** and stabilize it with a couple of large books or other heavy items so that the sides don't bulge. Cover the top of the container with a piece of either cardboard or plastic wrap (the wrap will leave little markings on the surface), and then insulate the soap by wrapping the entire mold with a towel and leaving it to go through the final stages of saponification.

Spraying with Alcohol

Though not necessary in this very basic recipe, most recipes call for spraying the top of your soap with 91% rubbing alcohol before letting it set up. I recommend giving it a good spritz every 30 minutes for 90 minutes (3 times total) to help prevent a light coating of soda ash from forming.

This is not necessary but does help with a more smooth, even finish. The soda ash is unattractive but it doesn't affect your soap's performance; it dissolves after the first few times you use the bar.

Pouring the soap into the mold

Insulating the mold

Unmold the Soap

9 **You can unmold the soap** when it is fully cooled and is hard to the touch. Depending on the temperature of the lye-water and oils when you combined them, the texture of the trace, and the temperature in your home, the soap may be ready for unmolding in as little as 24 hours or as much as a few days.

If you peek and find the soap is still warm or soft, wrap it back up and check on it the next day. After the first 24 hours, the towel is not necessary.

When the soap is hard enough to unmold, gently pull the mold away from the sides of the soap to release the entire block of soap. Since the carton is disposable, you can cut or tear it away from the soap.

10 **Using a sharp, nonserrated knife,** cut the soap into approximately 8 bars. If the soap releases successfully from the mold but is sticking to the knife or dragging, let it sit out on the counter or on a rack for 2 to 3 days before trying to cut it again.

11 **Let the soap cure.** Set the bars on their narrow edges on a baking sheet or tray lined with freezer paper, leaving several inches of space between them. Put the soap in a well-ventilated spot to harden and cure for 4 to 6 weeks. (An ideal location would be an open shelf in a lightly trafficked room in your house.) Soap is ready to use at the 4-week mark but will become even harder if you wait for a full 6 weeks. Turn the bars over every few days to ensure that they cure evenly.

Unmolding the soap

Cutting into bars

CHAPTER 4

Understanding Oil Choices

You have many options when selecting oils to use in making soap. The oils you choose will affect the final product with regard to lathering properties, moisturizing ability, bar hardness, and how your skin feels when you get out of the shower.

It generally takes two or more oils to create a well-formulated bar of soap. Many oils are wonderful in combination with others but when used alone don't create a stellar bar of soap. For example, coconut oil is renowned for its cleansing and lathering properties. But when used at 100 percent, it makes a hard, brittle bar that can leave skin feeling tight and dry. It is best used in conjunction with a conditioning oil such as olive oil.

What's in an INCI Name?

The Personal Care Products Council maintains a standardized list of scientific names for nearly 20,000 ingredients used in cosmetics — the International Nomenclature of Cosmetic Ingredients (INCI). The United States, members of the European Union, China, Japan, and many other countries all use INCI names when labeling cosmetic products. The entire list, which includes the function of each ingredient (emollient, surfactant, preservative, and so on), is available in CD-ROM or book format; it can also be accessed through the Personal Care Products Council website.

The following list includes a brief description of the oils most commonly used in soapmaking, their INCI names, and the amounts of each oil commonly used in soap recipes. For example, some oils can be used from 10 percent all the way to 100 percent of the total oils in a recipe. The percentage guidelines are just suggestions. Nothing bad will happen if you do not follow the suggested guidelines, though you may end up with a bar of soap that is not well balanced for lather, moisture, and conditioning properties.

Apricot Kernel Oil

Apricot kernel oil is high in unsaturated fatty acid, which conditions the skin but provides small bubbles. Because of this profile, it is generally not used at more than 15 percent of the total oils in the recipe. At higher percentages it produces a soft bar of soap that does not hold up well in the shower.

INCI name: Prunus Armeniaca (Apricot) Kernel Oil

SAP value: .135

Avocado Oil

Avocado oil is obtained from the pulp of the avocado and used in soap for its moisturizing and conditioning properties. It has a high percentage of fatty acids that do not react with lye to form soap, thus leaving luscious, skin-loving oil in your soap bar. It is rich in vitamins A, B, D, and E. It does not make a hard bar of soap, so is generally used at 20 percent or less in recipes.

INCI name: Persea Gratissima (Avocado) Oil

SAP value: .133

Canola Oil

Canola oil is a great economical option for soap recipes. Made from a type of rapeseed, it is moisturizing and creates a creamy, stable lather. Some soapers believe it can lead to DOS (Dreaded Orange Spots) in soap, but most soapers prefer it when developing recipes for complicated techniques such as elaborate swirls because it tends to slow the progress of trace, giving the soaper longer to work. Additionally, it produces a whiter soap that allows a wide range of colors to be used without the potential yellowing or greening effects from oils like olive. It can be used up to 35 percent in your recipe.

INCI name: Canola Oil

SAP Value: .132

A Word about SAP Values

Saponification (SAP) values for various oils can vary according to climate, processing methods, and botanical species from which the oil is derived. This potential variation is another reason to work with superfats at a level above 3 percent to ensure a well-formulated, safe bar of soap.

Castor Oil

Castor oil, which is processed from the seeds of the tropical castor-oil plant (*Ricinus communis*), has a unique fatty acid makeup, being composed almost entirely of ricinoleic acid, a monounsaturated fatty acid. This composition means that even though castor oil is a very thick, viscous oil — a characteristic which typically produces a hard bar — it makes a soft bar of soap when used at more than 10 percent in soap recipes. Use castor oil at 3 to 5 percent to help contribute to a stable, copious lather. Castor oil acts like a humectant and draws moisture to the skin.

INCI name: Ricinus communis (Castor) Seed Oil

SAP value: .128

Cocoa Butter

Despite its name, cocoa butter is not a butter in the traditional sense — as a solid, it is hard and brittle. It comes from the cacao bean and is a major component of chocolate. It can be purchased in either of two forms: deodorized or natural. In the latter form, it smells like warm cocoa. If you do not want the chocolaty smell to inhibit any light floral fragrances, then you should use the deodorized form. In either form, cocoa butter adds to the moisturizing content of the soap and helps create a hard bar that produces small, stable bubbles. When used at rates of more than 15 percent, it can contribute to cracking.

INCI name: Theobroma Cacao (Cocoa) Seed Butter

SAP value: .137

Coconut Oil

Coconut oil is obtained from dried coconut meat and is solid at room temperature. Different coconut oils have different melting points (76°F, 96°F, 101°F, and 110°F). All variations are fine to use, though the most popular one is the one with the lowest melting point. You often see the term RBD (refined, bleached, and deodorized) when buying coconut oil, even with an organic product. It's just a term to explain that the oil has been refined and strained for impurities, bleached for color, and deodorized for a more neutral smell.

Coconut oil contributes to the hardness of the soap. Though it helps produce copious bubbles, the lather is not stable, so coconut oil works best in conjunction with other oils. Because of its high cleansing power, using coconut oil at more than 25 percent of your total oils may make some people's skin feel dry. It's generally used at 35 percent or less.

INCI name: Cocos nucifera (Coconut) Oil

SAP value: .178

Hazelnut Oil

Hazelnut oil provides skin conditioning and a stable, small lather. It has a short shelf life. Because it is low in unsaturated fatty acids, this oil takes longer to trace and is normally used at less than 15 percent of the total oils in recipes.

INCI name: Corylus Avellana (Hazel) Seed Oil

SAP value: .136

Hemp Seed Oil

Though hemp seed oil does not make a stable, long-lasting bar of soap, it does make a luxurious one. Its high level of unsaturated fatty acids gives it great

moisturizing abilities, and though it does not contribute to large bubbles, it adds to the conditioning nature of the soap. Hemp seed oil is commonly used at 20 percent or less of the total oils in the recipe.

INCI name: Cannabis Sativa (Hemp) Seed Oil
SAP value: .135

Jojoba Oil

Jojoba oil — which is derived from the seeds of the jojoba shrub, native to the North American southwest — is actually a liquid wax, not an oil. Because of this, it is incredibly stable and will increase the shelf life of your soap. Jojoba oil adds

smoothness to soap, along with stable lather and skin-conditioning properties, but it can weigh down lather if used at more than 10 percent of the total oils in the recipe.

INCI name: Simmondsia Chinensis (Jojoba) Seed Oil

SAP value: .069

Mango Butter

Mango butter is obtained from the seeds of the mango fruit. It is a rich fat that adds excellent conditioning and moisturizing properties to soap. Because it does not contribute much to lather or hardness, it is generally used at 15 percent or less of the total oils in the recipe.

INCI name: Mangifera Indica (Mango) Seed Butter

SAP value: .184

Meadowfoam Oil

Meadowfoam oil is extracted from the seeds of the meadowfoam plant, a flower native to the Pacific coast of North America. It is a conditioning and moisturizing oil that adds to a creamy lather in soap. It is a good oil for adding a silky, smooth feel to products. It is typically used at 20 percent or less of the total oil in soap recipes.

INCI name: Limnanthes Alba (Meadowfoam) Seed Oil

SAP value: .120

Olive Oil

Olive oil is used in soap primarily for its exceptionally mild and creamy lather. It makes a long-lasting bar that produces tiny bubbles. Any grade of olive oil can be used in soapmaking, but pomace (the final press) is less expensive than extra-virgin olive oil and works just as well. The pomace grade sometimes speeds up trace, so keep that in mind when soaping delicate or intricate designs. Depending on the oil's color, which can range from a beautiful gold to a thick green, you may have some difficulty achieving a pure white soap if you use large amounts of olive oil in your recipe. Olive oil can be used up to 100 percent; when it is, the result is often referred to as castile soap (paying homage to the region in Spain where 100 percent olive oil soap originated). Castile soap has an incredibly long shelf life, lasting decades if stored well.

INCI name: Olea Europaea (Olive) Fruit Oil

SAP value: .134

Palm Kernel Oil

Palm kernel oil (which differs from palm oil) is refined from the kernel of the palm fruit, not the pulp. It is sold in the form of solid flakes that must be melted before mixing. It contributes to an exceptionally hard bar and adds a sheen to your soap. Because of their extremely brittle nature and natural tendency to accelerate trace, palm kernel oil flakes should be used at 15 percent or less of the total oils in the soap recipe.

INCI name: Elaeis Guineensis (Palm) Kernel Oil

SAP value: .178

Palm Oil

Palm oil is obtained from the pulp from the palm fruit, not the kernel. Its popularity in the food industry has led to concerns about oil palm plantations in West Africa crowding out animal habitats. Palm oil is widely used for its ability to make a hard bar of soap; it also acts as a secondary lathering agent when used in conjunction


Shea butter
Palm kernel oil
Cocoa butter
Palm oil
Coconut oil
Avocado butter
Mango butter

with coconut oil, helping stabilize the coconut oil's short-lasting bubbles with smooth, creamy ones. When you use palm oil, it's important to melt the entire container and stir it thoroughly before measuring the amount called for in the recipe. This ensures that all the different fatty acid chains diffused throughout the oil make it into the soap, preventing the production of bars that are too hard or too soft. Palm oil is generally used at 25 percent or less.
INCI name: Elaeis guineensis (Palm) Oil
SAP value: .144

Peach Kernel Oil

The moisturizing, conditioning oil from the peach kernel adds to the nourishing nature of your soap. It contributes to a stable lather in soap when used in conjunction with coconut oil. It is generally used at 25 percent or less.
INCI name: Prunus Persica (Peach) Kernel Oil
SAP value: .178

Rice Bran Oil

Rice bran oil is expressed from the husks of rice grains. It is a light oil that flows smoothly without being sticky. It makes a good addition in soap for its moisturizing and conditioning properties. Rice bran oil produces small, mild bubbles. It is an extremely stable oil, similar to olive oil in shelf life, and can be used up to 100 percent of the oils in your recipe.
INCI name: Oryza Sativa (Rice) Bran Oil
SAP value: .129

Shea Butter

Shea butter is obtained from the nut of the African shea tree. It is solid at room temperature and is known for its emollient (i.e., softening) and moisturizing qualities. Because it does not add to the lather or hardness in soap, it is typically used at 10 percent or less of the total oil in recipes.
INCI name: Butyrospermum Parkii (Shea) Butter
SAP value: .128

Soybean Oil

Soybean oil can be used as a hydrogenated oil (solid at room temperature) or as a liquid oil. While the solid and the liquid have the same saponification (SAP) value, they do have different fatty acid profiles, so the resulting bars will vary according to which type you use. Hydrogenated soybean oil produces a harder bar of soap than the liquid oil. Soybean oil has a creamy, stable lather with good conditioning abilities. It is also inexpensive, making it a popular oil. Soybean oil is typically used at 50 percent or below.
INCI name: Glycine Soja (Soybean) Oil or Hydrogenated Soybean Oil
SAP value: .135

Sunflower Oil

Sunflower oil varies with regard to the amount of linoleic and oleic acid it contains. Different sunflower oils may be labeled, for example, "high linoleic," "high oleic," or "mid-oleic." The fatty acid profiles reflect climatic and genetic differences, but sunflower oil is generally high in unsaturated fatty acids, which leads to a soft bar of soap. All types of sunflower oil are suitable for soapmaking, and all have the same SAP value. Sunflower oil produces a lather that conditions skin but is not entirely

stable. It has a short shelf life (up to only 12 months) and does best when used at 20 percent or less of the total oils in the recipe.

INCI name: Helianthus Annuus (Sunflower) Seed Oil

SAP value: .134

Sweet Almond Oil

Sweet almond oil is a light oil that adds to the conditioning and moisturizing feel of soap. It makes a soft bar and is typically used at 25 percent or less.

INCI name: Prunus Amygdalus Dulcis (Sweet Almond) Oil

SAP value: .136

Tallow

Tallow is rendered from the solid fat (commonly called suet) found in cows, sheep, horses, and other animals. You can render your own tallow (though it is a bit of a messy process) or purchase pre-rendered tallow. It provides a stable though small lather and makes a hard bar of soap. Since it is an animal product, if you are making vegan or vegetarian soap, you'll want to skip using it. Tallow can be used up to 100 percent of the oils in your recipe.

INCI name: Tallow (regardless of animal origin)

SAP value: .138–.141

Which Oils to Start With?

The holy trinity of oils consists of olive, coconut, and palm. If you want to invest in just a few oils to begin with, these are the ones to start with for the best results. While any soap can technically be made with 100 percent of any oil, the only oil I recommend to use up to 100 percent is olive oil. All other oils do best blended with other oils.

CHAPTER 5

Choosing Colorants

Although soapmaking is at heart a science, there is part of it that is also an art. The artistry of soapmaking comes with your choices related to color and fragrance. This chapter deals with the first creative aspect: adding colorants in the cold-process method of soapmaking.

As a soapmaker, you can begin your creative explorations by choosing from an amazing array of solid colors. You can then progress to creating soap with multiple layers of color or swirling patterns. Whether you want a basic solid or a fancy work of art, you should become familiar with the main types of colorants used in soaps: oxides and pigments, mica, FD&C colorants, and natural colorants.

Oxides and Pigments

Oxides and pigments (the terms are used interchangeably) traditionally are natural colorants that have been mined directly from the earth. These mineral colorants are derived from the oxidation of iron, with different colors coming from different oxidation states. However, materials mined from the earth tend to contain heavy metals like lead and arsenic. Therefore, according to the U.S. Code of Federal Regulations (Part 21, Section 73.2250), natural iron oxides that have not been purified to strict safety standards cannot be used as color additives in the United States.

Because of this, most oxides and pigments available today are produced in labs. They are nature-identical, which means they have the same molecular makeup as ones that are mined, and they typically have a higher degree of chemical purity. As a crafting plus, lab-created oxides and pigments are more regular in size than natural ones, which gives them a payoff in evenness and boldness of color. They also have a literal payoff, in that they are economical.

Oxides and pigments are a fantastic choice for coloring soap because they are stable (with the exception of magenta or rose oxide); that is, the color does not morph during the soapmaking process. Sold in either pre-mixed liquid or powder form, both oxides and pigments do have a tendency to clump, but premixing them in some liquid oil will help prevent clumping and thereby reduce spotting in the final product.

Storing Colorants

You can keep leftover oxides and pigments that have been mixed with oil; simply store them in sealed containers and reblend when you want to use that color again. Clay pigments that have been mixed with water cannot be stored as they can grow mold over time.

TIP: Unless you are purchasing from a trusted vendor whose products you are familiar with, you should make a test batch with every new colorant you try to ensure that the color remains bright and doesn't morph to an unappealing shade.

Mica

Mica is another natural product that is mined from the earth. Like a diamond, a piece of mica is a dull grayish white when it comes out of the ground but, when cut and processed, becomes shimmery, offering a sparkle not seen with other colorants. To achieve colors, micas are coated with additives that include FD&C colorants, carmine (a bright red pigment derived from ground-up beetles), and other pigments. If the mica is colored with a natural additive, such as an iron oxide, it is considered natural. If the mica is colored with a synthetic additive, such as an FD&C colorant, it is not considered natural.

Mica both reflects and refracts light, so it works best in clear products. If a colorant is added to the mica, the shimmer and sparkle will be muted. Some forms of mica will retain their color in your soap, while some completely change color (blues may go to purples, greens to corals) and others fade to nothing.

Note: To be used in soap products, mica must be colored with an additive that is approved by the U.S. Food and Drug Administration (FDA). Craft-store glitter and sparkle colors for scrapbooking and rubber-stamping do not have to follow the same rules as colorants for soap and cosmetics. Please only use approved colorants in your soap.

FD&C Colorants

Part of the U.S. Federal Food, Drug, and Cosmetic (FD&C) Act of 1938 gave the FDA the authority to certify synthetic colorants, also called dyes or lakes (from the same root as the word ***lacquer***), used in foods, drugs, and cosmetics. Manufactured in labs, FD&C colorants impart a bright and vibrant hue, but many of them are not stable in cold-process soap because their ingredients are not stable in the high-pH environment of fresh soap. Additionally, some of them can change dramatically in soap, morphing from a deep color to no color at all.

If you are using FD&C colorants, it's important that you check with the manufacturer on their stability in cold-process soap and do test batches with your particular blend of oils and additives. FD&C colorants come in powder, pastille, liquid, and paste forms. Premixed FD&C colorants, such as Labcolors, are the least messy to work with.

A Word about Colorants

Soap colorant options do not include crayons, Rit fabric dye, candle colorants, paints, or colors designed for industrial uses, such as pottery glazes, ink colors, and glass-dyeing products. Never use any material to color soap unless you are certain it is safe for use in cosmetic products.

WORKING WITH LABCOLORS

LabColors are highly concentrated, water-based FD&C and D&C dyes. They are a quick and reliable coloring system for cold-process soap, and come in a range of colors that can be blended to create numerous other colors. Because LabColors are dye-based, however, they will bleed when used in soap.

To save packaging space and weight, LabColors are shipped in concentrated form and require dilution. Diluting LabColors is easy — you need distilled water, a thermometer, a whisk or other stirring tool, a storage container, and a water-soluble preservative, such as Germaben II (unless the LabColors are to be permanently stored in the refrigerator). Gloves are a good idea, as LabColors will potentially stain skin and surfaces.

The dilution rates for LabColors are as follows:

- 10 ml in 4–8 ounces of water
- 20 ml in 8–16 ounces of water
- 125 ml in 50–100 ounces of water

The lower end of the scale above will give you a more concentrated color and the higher end of the water dilution scale will give you more of a subtle, watercolor effect.

Before mixing in the colorant, heat the required amount of distilled water to 140°F in a sterilized container. Do not go above this temperature or the integrity of the dye may be compromised. Shake the vial of LabColor and pour the contents into the heated water. Stir with a whisk until well incorporated. Pour the mixture into the clean storage container and allow to cool. Add a water-soluble preservative at its recommended usage rate (0.5 to 1 percent). Properly mixed LabColors can be stored at room temperature indefinitely.

The preferred method used in this book for measuring LabColors is by volume and not by weight. Because LabColors are extremely potent (even after being diluted), the amounts needed are minimal and thus are most accurately measured using volume measurements.

TIP: If there is some residue left behind in the vial, use a pipette to transfer a small amount of diluted and still-warm color back into the vial. Shake it a bit, then pour back in with the rest of the color. If the concentrated color in the vial is too thick to pour, heat it in the microwave on high in 10-second bursts.

Ceramic Sinks: A Cleanup Caution

If you have an older sink made of ceramic or porcelain, be extra careful when cleaning out containers that have held colorant mixtures. Since oxides are oil soluble, they tend to cling to cracks in older sinks and may cause stains, so wipe out the colorant bowl with a clean paper towel before washing it with liquid dish soap and warm water. Stainless steel sinks don't present the same problem.

Natural Colorants

Many herbs and clays make beautiful colors in soap. Interestingly, though the FDA has approved many herbs for use in food, it has not approved any herbs as colorants for soap. However, according to the FDA, herbs may be added to soap for natural properties other than color. If you are using an herb in your soap that also happens to impart color, that's fine; just make sure no one eats the end result!

But in all seriousness, while the FDA has approved these additives that provide color as food additives, they have not yet approved them as a cosmetic colorant. So if you plan to sell your soaps, do some extra research to make sure you don't run afoul of any labeling laws.

When you are using herbs or other natural colorants, make sure that they are either food-grade products or products approved for use in skin care. Some herbs and other materials that make strong natural colors are spirulina (green), annatto seed (yellow to orange), alkanet root (purple), cocoa powder (brown), charcoal (black), and pre-reacted indigo (blue).

Many clays also impart color to soap; they may be pink, gray, yellowish, or greenish, depending on the concentration of the minerals they contain. When using clays in soap, make sure you are using cosmetic-grade or food-grade materials. Pottery clays and craft-project clays are not purified enough to use in soap.

CHAPTER 6

Using Essential Oils and Fragrance Oils

Another creative aspect of soapmaking is the art of fragrance. There are two types of additives that will make soap smell good: essential oils and fragrance oils. Candy flavoring and baking extracts do not work well for adding fragrance to cold-process soap. They generally do not survive the high pH of the soapmaking process, leaving you with unscented or under-scented soap.

Essential Oils

Essential oils come from all-natural, plant-based materials obtained from leaves, bark, peels, twigs, or flowers. The most common way to extract essential oils is by steam distillation. The plant material is mixed with a large amount of water in a special tank and brought to a boil, causing the oils from the plant material to evaporate. As the water cools, the essential oils separate from the water. The fragrant water that remains, called a **hydrosol**, is often used as a base in lotions and face creams.

Another common method for extracting essential oils is manual extraction (pressing). Most citrus oils are extracted by pressing the skin of the fruit. The high heat from steam distillation can damage gentle citrus essential oils and is an inefficient way to extract large quantities of essential oil from the peel.

A less common method is enfleurage, which involves placing flowers between two solid layers of fat (usually an animal-based fat) and replacing the flowers daily until the fat has taken up enough oil from them to become fully saturated with scent. The resulting material is called a **concrete**. Concretes are not generally used in soapmaking because they are expensive and somewhat delicate to work with.

Oils can also be produced with a solvent extraction. Flowers are covered with a chemical solvent (such as hexane) that extracts the essential oil. The solvent is usually evaporated, leaving behind an oily mixture called an **absolute**. For the same reasons as concretes, absolutes are generally not used in soapmaking. Some soapers also prefer not to use them because of the chemicals involved in the extraction process.

With the exception of solvent-extracted essential oils (which can contain trace amounts of the chemicals used to extract the oils), essential oils are all natural. That is, they are produced from natural oil-bearing plants in processes that use other materials found in nature. You cannot, for example, have a chocolate essential oil or a cherry essential oil, because neither ingredient produces oil. Cherries produce a wonderful juice that could be used in the soapmaking process but it wouldn't impart any fragrance.

HANDLE WITH CARE

Even though they are all natural, essential oils must be used with care. For example, clove and cinnamon leaf are skin irritants and therefore should be used sparingly in soap. Some essential oils are contraindicated for pregnant women or individuals with high blood pressure or other health conditions.

Use only those essential oils that you know are safe. If you want to experiment with one that you are not familiar with, research its properties thoroughly beforehand. Read books, look online, or call the vendor for information.

The following essential oils should never be used in soap or any other bath or body product:

- Bitter almond
- Mugwort
- Pennyroyal
- Rue
- Wintergreen
- Wormwood

Note that not all essential oils are stable in cold-process soap. For example, orange essential oil smells amazing in the bottle, but in soap it withers a slow and painful death, leaving no scent behind. Before you purchase an essential oil for the first time, ask other soapers or the vendor how that oil will do in the difficult environment of raw soap batter.

The following essential oils are typically wonderful in cold-process soap:

- Anise
- Black pepper
- Cedarwood
- Citronella
- Clary sage
- Clove leave
- Egyptian geranium (rose geranium)
- Eucalyptus
- Fennel
- Fir needle
- Lavender
- Lemongrass
- Litsea
- Patchouli
- Peppermint
- Rosemary
- Spearmint
- Tea tree

Other essential oils not listed here may work in your soap depending on how they have been extracted. For example, redistilled orange essential oil (often referred to as orange 5× or 10×) will last in cold-process soap, whereas a traditional distillation of orange essential oil will not. The best way to find out about an unfamiliar essential oil is first to ask questions and then, if your research suggests it may be suitable, to use it in a small test batch of soap.

Purchasing Essential Oils

Different batches of the same essential oil may smell slightly different due to any of several factors. Like wines, essential oils are affected by the weather, by nutrients in the soil, and by harvest conditions. And as with wine, annual crop conditions also affect prices. If less oil is harvested than expected for the year, the price generally goes up.

Sourcing can be a concern for those who use only essential oils in their soap. Plan ahead a year or so and purchase enough to last through the next growing season if you are concerned about the scarcity of a particular oil.

One thing to be aware of is that essential oils can be easily adulterated by unscrupulous vendors. For example, rose essential oil can cost around $250 an ounce because it takes more than 4,000 pounds of rose petals to make 16 ounces of the oil. That is a lot of roses! To make it more profitable, a vendor may stretch or extend an oil by adding other materials to it.

It is extremely important that you purchase your essential oils from a trustworthy source. Ask your vendors if they do spot checks on their essential oils to confirm that there has been no adulteration in the process. If you are ever concerned or suspicious about a product you have purchased, you can pay for a chemical analysis from a lab (see Resources).

Fragrance Oils

Fragrance oils, created by fragrance companies, are proprietary blends of natural oils, synthetic materials, and nature-identical chemicals (i.e., synthetic but chemically equivalent to natural oils). Unlike essential oils, fragrance oils are not considered all natural. If you would like to make an all-natural soap, stick with essential oils. If you would like a wider array of choices — like chocolate, blueberry, or bubble gum — fragrance oils are an excellent option. Fragrance oils also remain more stable in pricing than do essential oils and do not suffer shortages due to crop instabilities. Additionally, some fully tested soap fragrance oils produce a stronger smell in the finished product than do some essential oils — this is especially true in the citrus family.

More than 3,500 ingredients are approved for use in fragrance oils, but you won't see them listed on the bottle. Fragrance manufacturers are exempt from full ingredient disclosure because of laws pertaining to trade secrets. Perfumers consider themselves artists who create unique blends, and disclosure requirements would allow competing perfumers to easily copy one another.

Additionally, many of the ingredients in fragrance oils have long names like cyclopentaneacetic acid, 3-oxo-2-pentyl-methyl ester, and even 1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylcyclopenta-gamma. With some fragrances containing up to 100 ingredients, putting them all on the

labels could be more confusing than helpful and would probably make the labels too big to fit on the bottles!

Fragrance oils are not regulated by the U.S. Food and Drug Administration, but fragrance oil manufacturers do have to follow testing and safety regulations established by the Research Institute for Fragrance Materials (RIFM). RIFM was formed in 1966 to analyze, evaluate, and distribute scientific data; cooperate with official agencies; and encourage safety standards for the use of fragrance ingredients. RIFM's team of independent experts includes dermatologists, pathologists, environmental scientists, and toxicologists who evaluate fragrance ingredients and determine safety standards for them. RIFM publishes ingredient lists, conducts safety assessments, and then turns the data over to the International Fragrance Association (IFRA), the official representative body of the fragrance industry. IFRA develops standards on fragrance materials and suggests usage rates for fragrance oils.

Purchasing Fragrance Oils

When you purchase fragrance oils, check with the vendor to make sure that the oils have been tested in the cold-process method for soapmaking. Ideally, the vendor will have testing notes that will help guide you to ensure that your fragrance is as compatible as possible with your recipe. Manufacturers of candle fragrances and potpourri fragrances do not follow the same stringent safety guidelines that makers of skin-safe fragrances follow. When making soap, use only skin-safe fragrances and follow the usage-rate guidelines from the supplier.

Using Essential Oils and Fragrance Oils

A general rule for essential oils and fragrance oils is to add 0.5 to 1.0 ounce of oil per pound of soap. With a particularly strong essential oil or fragrance oil, you can use less than 0.5 ounce and still create a pleasantly fragrant soap. However, with a weak essential oil or fragrance oil, adding more than 1.0 ounce per pound of soap will usually not strengthen the scent.

If you are using a fragrance oil that has not already been fully tested in cold-process soap, make a test batch of 1 pound or less before trying it in larger amounts. While most fragrance oils can be used with no problems at all, some can throw your soap into a tailspin in a number of ways, including the following:

Accelerate the trace, making your soap thicken very quickly.

Seize the soap, creating a rock-hard lump before you even have time to blink.

Separate the soap mixture, producing a strange, oily, curdy mess.

You add the fragrance oil when your soap is at thin trace (the consistency of a melted milkshake), after you've added the colorant. If you add the fragrance before the colorant and the fragrance accelerates trace or causes the batter to separate, you may be left with white or unevenly colored soap. Hand stirring at thin trace is the best way to add fragrances to your soap. Mix until the fragrance is fully blended. If the fragrance is behaving particularly well, you can use the stick blender, but only for fragrances you're certain perform well in cold-process soap.

PART 2

31 Cold-Process Recipes

CHAPTER 7

Playing with Color

Let's have some fun with color! Whether you're into bright, bold, high-contrast colors or calm, soothing neutrals, using the color wheel can really enhance your soap. Using just two colors in a big batch adds an extra-special touch to your hard-earned bars. For high-impact, high-contrast soaps, choose colors on opposite sides of the color wheel.

If you're selling the soaps, color is generally what will draw in the customers, especially at online retail outlets. Don't be afraid to go big and bold, but remember that sometimes the best color combinations are the classics.

Think about your favorite combinations outside of soap making and incorporate them into your design. Or what colors have you always loved but been too afraid to add to your wardrobe? Try them in soap!

Natural Colors

If you want an all-natural soap, this recipe is for you. Each 2-pound batch uses just one of the options. The herbs suggested for this recipe produce soft, soothing natural colors.

Alkanet root comes from a plant grown in Europe. On its own, it is a natural astringent. As with many herbs suitable for the cold-process method, the color that alkanet root produces in soap can vary, but the range is from mauvey purple to grayish blue. The lower the pH of your soap, the more purple the final soap will be. Alkanet can be infused in oil or added directly in powder form.

Annatto seed is commonly used as a spice and as a food coloring in Latin America. With its slightly nutty, sweet, and peppery flavor, it can substitute in cooking for the very expensive saffron flower. The seeds are infused in oil to achieve a lovely range of color from yellow to bright orange.

Spirulina is known as a whole-food, high-protein dietary supplement; in some Middle Eastern countries, it is a dietary staple. In soap, it produces a pretty green color. It can be infused in oil to give a subtle tint, but it does not infuse easily. It is most convenient when added directly to the soap in powder form. The powder will provide a strong color and will create a mildly speckled look, which adds interest.

Approximately 8 bars

Lye-Water Amounts

3.1 ounces sodium hydroxide (lye)
7.6 ounces distilled water

Base Ingredient Amounts

3.5 ounces palm oil
3.9 ounces coconut oil (76°F)
0.7 ounce castor oil
5.8 ounces olive oil
9.2 ounces rice bran oil

Colorant (choose one)

- **Alkanet root infusion:** 2 tablespoons alkanet powder + 4 ounces by weight of sweet almond oil
- **Alkanet root powder:** Start with 1 teaspoon of alkanet powder directly in the soap. Two teaspoons will produce a subtle mauve color. You can use up to 1 tablespoon of powder per pound of finished soap.
- **Annatto seed infusion:** 5 ounces by weight sweet almond oil + 2 tablespoons annatto seed
- **Spirulina powder:** 2 teaspoons

Fragrance

1.5 ounces essential oil of choice

TIP: With spirulina, use a blend of 3 parts lime oil and 1 part basil oil. With alkanet, try sweet fennel oil. With annatto, try fir needle oil.

Equipment

- Standard equipment (see list on page 21)
- 2-pound-capacity mold
- Heat-sealable tea bag
- Half-pint mason jar with lid
- Double boiler, slow cooker, or heavy-bottom pan

Prepare the mold. Line the mold with freezer paper, shiny side up.

Prepare the colorant. Prior to starting the soapmaking process, measure the colorant into a heat-sealable tea bag and follow the manufacturer's instructions for sealing the bag (usually with an iron). Measure the sweet almond oil into the mason jar and place the tea bag in the oil.

Seal the mason jar and place it in the double boiler, slow cooker, or heavy-bottom pan; add enough cold water to reach almost to the top of the mason jar. Heat the water on medium until just below the boiling point; then let sit on low heat for approximately 2 hours. The longer the herb steeps, the darker the infusion will be. Allow the infusion to cool before adding it to the soap mixture.

Make the Soap Mixture

1. **Add the lye** to the water (never the other way around); stir gently; and set aside until clear.
2. **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the castor oil, olive oil, and rice bran oil; stir to combine.
3. **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, about 2 minutes.

Alternate Method for Infusing Herbs

If you do not have a heat-sealable tea bag, you can infuse the loose herbs in the oil, following the instructions above, and strain them out after the infusion process. You may be left with a very fine dusting of herbs that are too small to be strained out.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

4 **Add the herb or herbal infusion** until you achieve the intensity and shade you like. Some suggestions: 2 teaspoons of spirulina powder, or 1½ tablespoons of the alkanet root infusion, or 3 tablespoons of the annatto seed infusion. Optional: To add a bit of a speckled texture to alkanet soap, add ½ teaspoon of powder to the batch. Stick-blend until the colorant is well incorporated.

5 **Add the essential oil(s).** Stick-blend until a medium to thick trace is reached.

Pour the Soap

6 **Pour the soap** into the mold.

TIP: You can create a great texture on the top of the soap by pouring it at a super thick trace. Achieving a super thick trace is easy: Just stick-blend until the soap batter makes easy peaks.

Final Steps

7 **Spray with** 91% isopropyl rubbing alcohol two or three times over a 90-minute period to help decrease soda ash.

8 **Insulate the entire mold** by wrapping it in a large towel, and set it aside for at least 24 hours at room temperature before unmolding. If the soap is not hard enough, leave it in the mold a few more days before attempting to unmold.

TIP: If your soap design peaks over the mold from pouring at a thick trace, shield the top of the mold with a tent made of cardboard, as shown below, before wrapping it in the towel.

9 **Unmold the soap,** cut it into bars, and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Black and White

Three basic elements contribute to good design: emphasis, balance, and contrast. Don't be intimidated; you might be surprised at how easily each of these elements can be included in your soap. For this recipe, a classic black-and-white color scheme highlights all three elements. A discoloring fragrance oil is used to the advantage of the design of this soap. The high color contrast adds maximum emphasis, while the central dividing line adds balance. The result is a simple yet visually appealing bar of soap.

A "pouring buddy" — an extra set of hands — is helpful but not necessary if you're strong enough to handle pouring both batches at once.

Approximately 16 bars

Lye-Water Amounts

- 6.6 ounces sodium hydroxide (lye)
- 15.1 ounces distilled water

Base Ingredient Amounts

- 11.3 ounces palm oil
- 11.5 ounces coconut oil (76°F)
- 3.2 ounces palm kernel flakes
- 2.3 ounces shea butter (refined)
- 1.4 ounces castor oil
- 16.1 ounces olive oil

Colorants

- 1 teaspoon Black Oxide
- 1 teaspoon Titanium Dioxide
- 2 tablespoons sunflower oil (or other liquid oil)

Fragrances

- 1.6 ounces Pepperberry fragrance oil
- 0.8 ounce Cinnamon Sugar fragrance oil
- 0.8 ounce Cream Cheese Frosting fragrance oil

Equipment

- Standard equipment (see list on page 21)
- 4-pound vertical mold with middle divider
- Mini-mixer

Prepare the mold (optional). The divider fits snugly, so lining is not necessary if you're okay with a couple of tiny leaks. If you are a super clean soaper and hate any little soap leaks, you can line the mold with freezer paper, shiny side up. Different temperatures can cause the wood and the dividers to expand and contract, so if you're working in a very cold area, you might consider lining the mold to prevent leaks.

Prepare the colorant. Prior to starting the soapmaking process, mix each color in 1 tablespoon of sunflower oil, using the mini-mixer. Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin or you'll stir up a messy cloud of pigment. Mix each colorant thoroughly for the most even color results.

Make the Soap Mixture

1. **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.
2. **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Add the coconut oil and the palm kernel flakes to the palm oil and heat until melted. Add the shea butter to the warm oil and stir until melted, then add the olive and castor oils.
3. **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, about 2 minutes.
4. **Split the batch in half,** about 4 cups each. Add 2 teaspoons of the Titanium Dioxide mixture to one of the halves, using a whisk so as not to accelerate trace. To the other half, add ½ teaspoon of the Black Oxide mixture and, again, mix with a whisk.

5. **To the white-colored soap,** add the Pepperberry fragrance oil and incorporate well, using a whisk. To the black-colored soap, add the Cinnamon Sugar and Cream Cheese Frosting fragrance oils and incorporate well, using a whisk.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

Pour into the Mold

6 **With the center divider** in the vertical mold, have your "pouring buddy" pour one batch of soap into one side of the mold while you pour the other batch into the other side at the same time. (You can pour by yourself but it does take some strength and coordination, as you have to pour both batches at the same time to keep the divider in place.) Pour until the mold is full. Set aside any leftover soap.

7 **Slowly and carefully** remove the center divider from the soap.

8 **The removal of the divider** will displace the soap; there will be a gap at the top of the mold. Use the leftover soap to fill this gap. Be sure to add the appropriate-color soap to each side. By now, the soap should be thick enough to stay on its own side of the mold, but pouring both colors of the leftover soap into the mold at the same time will ensure this.

Final Steps

9 **Let soap sit in the mold** for 3 to 4 days, or until it is ready to be removed.

10 **Remove the soap** by unscrewing the vertical sides of the mold, gently laying the soap on the side of the table and pushing and sliding the liners off. Never pull the sides straight off as that may tear the soap. (See photos on page 127.)

11 **Cut the soap** into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

5-Color Neon Cube

This recipe is a twist on the in-the-pot swirl technique used in Shoebox In-the-Pot Swirl (page 110). It is poured into individual cavities for more distinction and color-pattern variation. Be sure to use a fragrance oil that does not accelerate trace. You need as much time as possible to work with this technique.

Sodium lactate is a salt that acts as a hardening agent and facilitates the release of the soap from silicone molds, which tend to create an airlock between the soap and the mold that extends the time it takes for the soap to set up.

Approximately 12 bars

Lye-Water Amounts

7.8 ounces sodium hydroxide (lye)
18.1 ounces distilled water

Base Ingredient Amounts

11.0 ounces palm oil
14.3 ounces coconut oil (76°F)
2.2 ounces palm kernel flakes
4.4 ounces mango butter
1.1 ounces castor oil
5.5 ounces rice bran oil
16.5 ounces olive oil
3½ teaspoons sodium lactate

Colorants

1 teaspoon Titanium Dioxide
1 teaspoon Fizzy Lemonade
1 teaspoon Fired Up Fuchsia
1 teaspoon Ultraviolet Blue
1 teaspoon Electric Bubble Gum
5 tablespoons sunflower oil (or other liquid oil)

Fragrance

3.8 ounces Wasabi fragrance oil

Equipment

- Standard equipment (see list on page 21)
- Mini-mixer
- 9-bar silicone cube mold
- Extra soap-safe mold for any overpour (recipe makes more soap than needed for the 9-bar mold)

Prepare the colorant. Prior to starting the soapmaking process, mix each color in 1 tablespoon of sunflower oil, using the mini-mixer. Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin or you'll stir up a messy cloud of pigment. Mix each colorant thoroughly for the most even color results.

Make the Soap Mixture

1 **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.

2 **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Melt and add the palm kernel flakes and the mango butter. Add the castor, rice bran, and olive oils and stir in fully.

3 **When both the oils and lye-water** are below 120°F, add the sodium lactate to the lye-water. (The usage rate for sodium lactate is typically 1 teaspoon per pound of oil.) Then add the lye-water to the oils, pouring it over a

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

5-Color Neon Cube

spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, about 2 minutes.

4 **Split the batch** into five parts, about 2 cups each.

5 **Color the batches** as follows:

- Special blend: 1½ teaspoons Electric Bubble Gum mixture, 1 teaspoon Fizzy Lemonade mixture, and ½ teaspoon Ultraviolet Blue mixture
- 1 teaspoon Titanium Dioxide mixture
- 2 teaspoons Fizzy Lemonade mixture
- 1½ teaspoons Fired Up Fuchsia mixture
- 2 teaspoons Ultraviolet Blue mixture

Switch to a whisk for this part to keep the soap from accelerating too much. Maintain light to medium trace.

6 **Divide the Wasabi fragrance oil** among the batches (eyeballing the amount is okay; just divide the fragrance oil into roughly equal parts), and whisk until well incorporated. Again, keep trace light to medium.

Pour and Swirl

7 Pour the entire amount of the special blend batch into the bowl (7a). Pour the other four colors in any order into the special blend in different spots, using roughly one third of the batch for each spot (7b and c). Try to make round spots with no wobbly lines. The entry points can be random, but you'll create more visual interest if you put different colors next to each other.


7a


7b


7c

8 **Using a swirl tool** (such as a skewer or chopstick), swirl the soap in the pot using a circular motion and taking care to swirl directly through the entry points you made with the different colored soaps. Make two complete passes only. You want the soap to swirl slightly, not mix together!

9 **Pour the soap into the mold,** which will swirl it even more. You can aim for the same spot in the cavities with each pour or you can switch it up for a different look. No two batches or bars will look exactly alike.

Final Steps

10 **Spray the surface of each bar** with 91% isopropyl rubbing alcohol two or three times over a 90-minute period, then cover with either plastic wrap or a lid fashioned out of cardboard.

11 **Insulate the entire mold** by wrapping it in a large towel and set it aside for at least 24 hours at room temperature before uncovering. Unmold when the soap releases easily; this may take up to a week in silicone molds. Pull the sides of the mold gently away from the soap, turn the mold over and push carefully down with your palm. If the soap tears, either freeze it solid or wait a few more days before attempting to release it.

12 **Allow the unmolded bars to cure** in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

TIP: If you prefer smaller bars, simply cut the cubes in half before setting them out to cure.

LabColors Ombre

Ombre is a French word meaning "shade" and is most commonly used to reference a dip-dyeing technique currently popular in the fashion industry. Using the LabColors' inherent tendency to bleed in an attractive way, this recipe takes the idea to another level of design with an inverted ombre look — the darkest part is in the center of the design instead of on the edge. The addition of hemp seed oil and mango butter make for a super-luxe bar to pair with this trendy technique.

Approximately 8 bars

Lye-Water Amounts

3 ounces sodium hydroxide (lye)
7.26 ounces distilled water

Base Ingredient Amounts

3.3 ounces palm oil
4.4 ounces coconut oil (76°F)
1.1 ounces mango butter
1.1 ounces hemp seed oil (refined)
12.1 ounces olive oil

Colorants

12 mL diluted Royal Purple LabColor
9 mL diluted Fuchsia LabColor
(See Working with LabColors, page 44.)

Fragrance

1.5 ounces Cranberry Fig fragrance oil (or any oil that gives you lots of time to work)

Equipment

- Standard equipment (see list on page 21)
- 2-pound wood log mold

Prepare the mold. Line the wood log mold with freezer paper, shiny side up.

Make the Soap Mixture

1. **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.
2. **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Cut the mango butter into chunks and add to warm oils. Stir until melted, then add the hemp seed and olive oils.
3. **When the oils and the lye-water** are both below 130°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Pulse the stick blender until the lye-water and oils are just incorporated.

4 **Add the Cranberry Fig fragrance oil** and stick-blend until a light trace (the consistency of a melted milkshake) is achieved.

TIP: For the most accurate pours, set the mold on a scale, tare the scale, and measure each pour by weight.

Pour and Layer

5 **Split off 12 ounces of the soap base** (approximately one third of the total) and set the larger amount aside until step 10. Pour approximately 25 percent (3 ounces) of the smaller container into the mold.

6 **Color the remaining soap base** with 3 mL of Royal Purple LabColor, using a whisk to mix. (Don't be surprised if the batter doesn't appear purple at first; the color will change.) Pour approximately 33 percent (3 ounces) of the colored soap base into the mold, pouring over a spatula so as not to break through the first layer.

7 **Color the remaining soap base** with an additional 3 mL of Royal Purple LabColor, and pour approximately 50 percent (3 ounces) of that colored soap base into the mold over a spatula so as not to break through the other layers.

8 **Color the last of the soap base** with 2 mL of Royal Purple LabColor, and pour into the mold over a spatula so as not to break through the other layers.

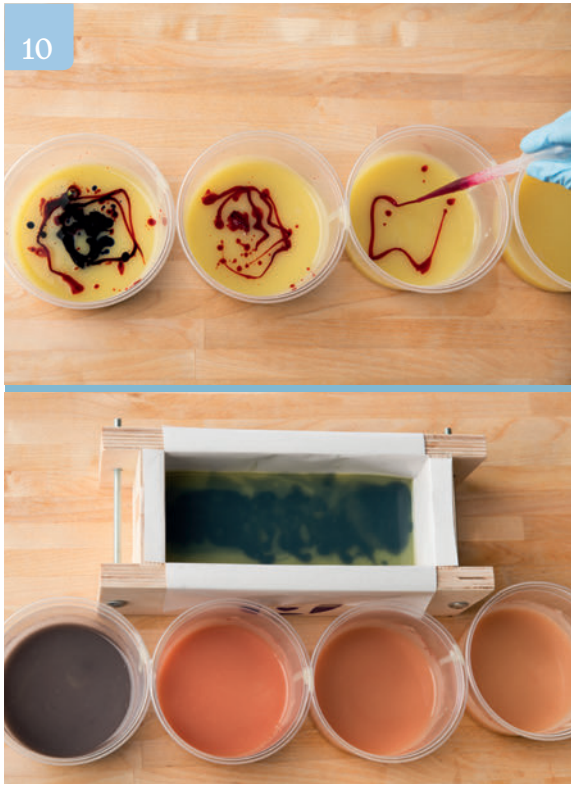
SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

9 **If using the scale** for steps 5 to 8, remove the mold from the scale. Tamp the mold on the work surface to flatten the layers and remove any air bubbles.

10 **Split the reserved 20 ounces** of uncolored soap base into 4 equal batches. Color the batches as follows, stirring with a whisk to incorporate:

- 4 mL Royal Purple LabColor and 3 mL Fuchsia LabColor
- 3 mL Fuchsia LabColor
- 2 mL Fuchsia LabColor
- 1 mL Fuchsia LabColor



11 **Pour each batch,** starting with the darkest color and going to the lightest, into the mold over a spatula so as not to break through the previous layers.

12 **Tamp the mold** on the work surface to flatten the layers and remove any air bubbles.

Final Steps

13 **Spray the surface** of the soap with 91% isopropyl rubbing alcohol two or three times over a 90-minute period to help decrease soda ash, then cover with a lid fashioned out of cardboard.

14 **Insulate the entire mold** by wrapping it in a large towel and set it aside for at least 24 hours at room temperature before unmolding. Unmold within 3 to 4 days.

15 **Cut the soap** into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Column Pour

Obstructing the path of the soap mixture during the pour can create a great look and texture in the final product. In this recipe, a weighted rectangular block is used to distribute soap batter in an unusual and fun pattern. Complementary hues with just a bit of contrast make a great color scheme, and you can use a squirt bottle and swirl tool to enhance the design.

Slow-moving base oils, such as olive, sweet almond, and canola, and an equally relaxed fragrance oil are key factors in giving you more time to design this unique color scheme.

Approximately 18 bars

Lye-Water Amounts

11.5 ounces sodium hydroxide (lye)
26.4 ounces distilled water

Base Ingredient Amounts

16.0 ounces palm oil
20.0 ounces coconut oil (76°F)
8.0 ounces canola oil
12.0 ounces olive oil
16.0 ounces sweet almond oil
8.0 ounces palm kernel flakes

Colorants

15 mL diluted Yellow LabColor
15 mL diluted Tangerine LabColor
28 mL diluted Red LabColor
15 mL diluted Berry Red LabColor
(See Working with LabColors, page 44.)

Fragrance

5.3 ounces Fresh and Fruity fragrance oil blend made of:

- 2.5 ounces of Red Apple fragrance oil
- 1.5 ounces of Kumquat fragrance oil
- 1.3 ounces of Energy fragrance oil

Equipment

- Standard equipment (see list on page 21)
- Cardboard or wooden block, about 2" × 2" × 6"
- 18-bar birch-wood mold

Prepare the mold. Line the mold with freezer paper. Stand the block on end in the center of the mold. (If you are using cardboard, cover the block with heavy tape to moisture-proof it and put weights, like rocks, inside to hold it down.) The top of the block should reach past the top of the soap mold.

Make the Soap Mixture

1. **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.

2. **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the canola, olive, and sweet almond oils. Add the palm kernel flakes to the warm oils and stir until melted.

3. **Because of the palm oil and palm kernel flakes,** this recipe does better a little warmer than most soaping recipes. When the oils and the lye-water are both below 140°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, about 1 to 2 minutes.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

4 **Split the soap into 4 batches.** Note: If using the titanium dioxide mixture for the optional design (see next page), pour a few ounces of the soap into the squirt bottle, place a gloved finger over the tip of the bottle, and shake well to combine.

5 **Color each of the four batches** with one of the LabColors. Use a whisk to mix in the colors so as not to accelerate trace too much. (The colors may appear different in the soap batter than they will after the soap has cured.)

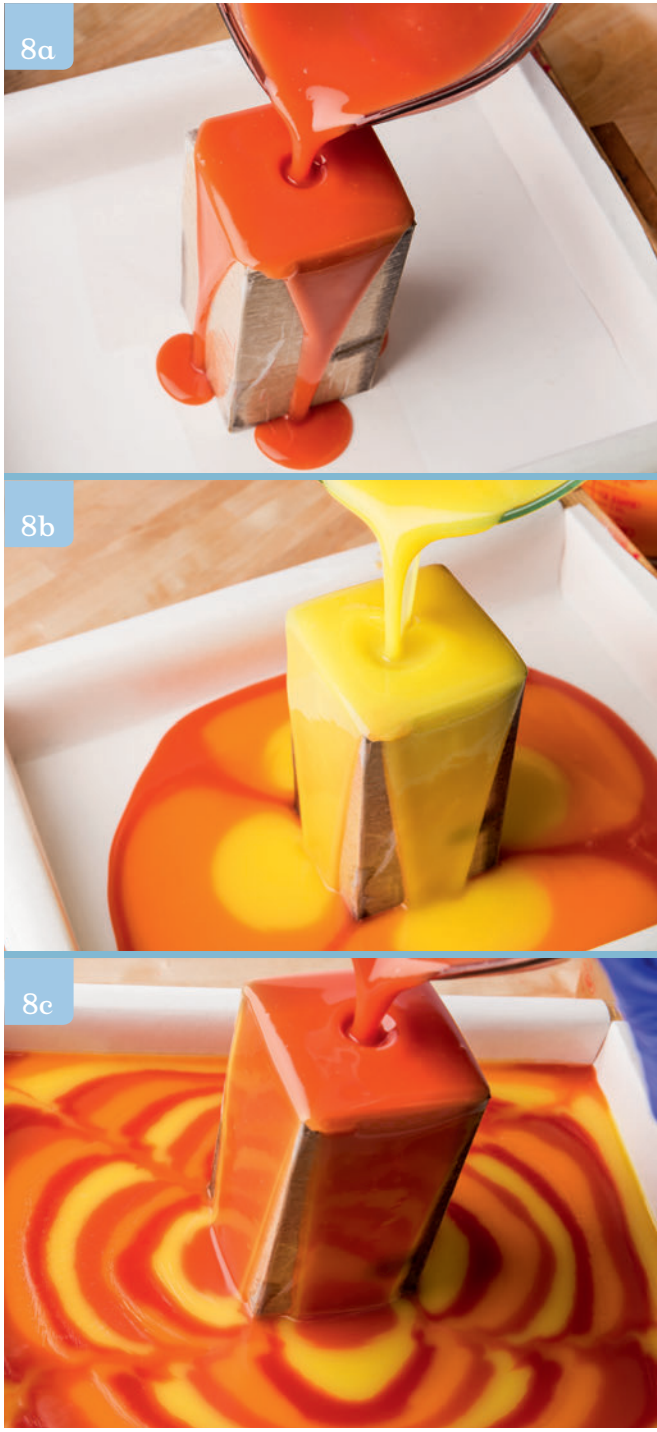
6 **Add about 1.3 ounces** of the Fresh and Fruity fragrance oil blend to each of the four colored batches. Continue to use a whisk to mix in the fragrance oil.

Pour and Swirl

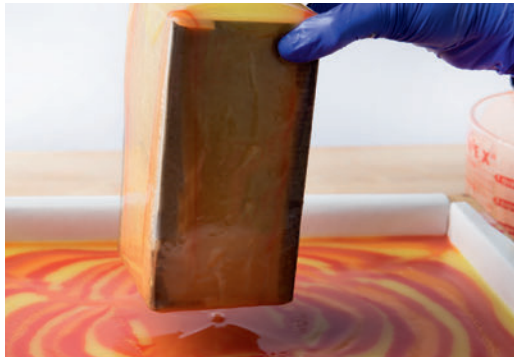
7 **Decide on a color order;** line up the containers of soap accordingly near the prepared mold.

8 **Pour the first color** over the center of the block, counting to 3 (8a). Repeat this step with a different color, again counting to 3 to ensure an even pour (8b). Alternate the colors until all of the soap has been used (8c).

TIP: For a more unpredictable color design, don't count as you're pouring.



9 **Slowly remove the block from the mold.** Tamp the mold on the work surface to settle the soap and remove any air bubbles.



Final Steps

10 **To help decrease soda ash formation,** spray the entire surface with 91% isopropyl rubbing alcohol two or three times over a 90-minute period, then cover the mold with either plastic wrap or a lid fashioned out of cardboard.

11 **Insulate the entire mold** by wrapping it in a large towel and set it aside for at least 24 hours at room temperature before unmolding. An alternative method is to place the mold on a heating pad, set to low, for 30 minutes; this will ensure gel phase for colors that are bright and vibrant. After 30 minutes, turn the heating pad off and allow the insulated soap to sit for 24 hours before uncovering and peeking.

Gel phase refers to a stage of the soapmaking process where the soap becomes super hot and turns gelatinous-looking. It is not necessary but it does help the soap develop brighter colors and a shinier texture.

12 **Cut the soap** into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Optional Swirls

You can use a line of white soap to add another layer of design as shown in the photo here. You'll need a ½ teaspoon Titanium Dioxide in ½ tablespoon sunflower (or other liquid oil) and a condiment squirt bottle. Before you begin soaping, combine the Titanium Dioxide with the sunflower oil, using the mini-mixer. Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin or you'll stir up a messy cloud of pigment. Mix thoroughly, pour into the condiment bottle, and add soap (step 4).

After pulling the block out (step 9), trace the space between the swirl colors using the condiment bottle of white soap. Using a swirl tool (such as a skewer or chopstick) placed in just the top of the soap, drag through the lines to create a swirl pattern, spiderwebbing or interesting geometric shapes.

Funnel Pour

In this technique, you use a funnel to guide the different colors of soap batter so that they hit in one spot in a steady stream, creating uniform bars with an engaging design.

How you cut the soap is important in a funnel-pour batch. While ordinary methods of cutting still produce a gorgeous bar, you can use the horizontal cutting tip given at the end of this recipe to take your soap to the next level. No matter how you cut, each bar is different with the funnel-pour technique.

Approximately 20 bars

Lye-Water Amounts

8.4 ounces sodium hydroxide (lye)
19.8 ounces distilled water

Base Ingredient Amounts

18.0 ounces palm oil
15.6 ounces coconut oil (76°F)
1.8 ounces shea butter (refined)
1.2 ounces castor oil
3.0 ounces avocado oil
20.4 ounces canola oil

Colorants

½ teaspoon Brown Oxide
1 teaspoon Titanium Dioxide
1½ tablespoons sweet almond oil (or other liquid oil)
⅛ teaspoon Luster Black Mica
4 mL diluted Fuchsia LabColor
6 mL diluted Easter Purple LabColor
8 mL diluted Sage Mist LabColor

(See Working with LabColors, page 44.)

Fragrance

4 ounces Blackberry Sage fragrance oil

Equipment

- Standard equipment (see list on page 21)
- Mini-mixer
- 5-pound wood log mold
- Clean 32-ounce plastic yogurt or deli container (at least 5" tall)
- Funnel
- Duct tape or masking tape

Prepare the colorants. Prior to starting the soapmaking process, mix the Brown Oxide in ½ tablespoon of the sweet almond oil, and the Titanium Dioxide in 1 tablespoon of the sweet almond oil, using the mini-mixer. Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin or you'll stir up a messy cloud of pigment. Mix each colorant thoroughly for the most even color results.

Prepare the mold. Line the mold with freezer paper, shiny side up. Cut a hole in the bottom of the plastic container and insert the neck of the funnel into the hole (see page 81). Situate the plastic container in the center of the mold. For extra stability, you can tape the container to the mold.

Make the Soap Mixture

1. **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.
2. **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the shea butter to the warm oils and stir. Once the shea butter is melted, add the castor, avocado, and canola oils.
3. **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, about 2 minutes.

4 **Split the soap** into five batches, about 2 cups each.

5 **Color each of the five batches** as follows:

- ¼ teaspoon Brown Oxide mixture + 1 teaspoon Titanium Dioxide mixture
- ⅛ teaspoon Luster Black Mica + 1 teaspoon Titanium Dioxide mixture
- 4 mL Fuchsia LabColor
- 6 mL Easter Purple LabColor
- 8 mL Sage Mist LabColor

Use a whisk or spoon to mix in the colors so as not to accelerate trace too much.

6 **Add 0.8 ounce** of the Blackberry Sage fragrance oil to each batch. Continue to use a whisk or spoon to mix in the fragrance oil.

Pour and Pour Some More

7 **Decide on a color order** for the pour. It's important to maintain the same order throughout the pouring process. Line up the containers in order near the prepared mold.

8 **Pour the first color** into the mold through the funnel, counting to 3. This ends up being just a couple ounces of soap batter. Follow the first color with the second, third, fourth, and fifth colors, counting to 3 for each pour.

9 **Starting with the first color,** run through the color order again and repeat until all of the soap is in the

mold. You'll pour each one approximately 10 times, depending on how thick your soap is, how long you pour, and the size of your funnel. If the soap starts to mound underneath the funnel, gently shake the mold to settle the soap. If the soap in the containers looks grainy, whisk it well before pouring.

Final Steps

10 **To help decrease soda ash formation,** spray the entire surface with 91% isopropyl rubbing alcohol two or three times over a 90-minute period, then cover the mold with either plastic wrap or a lid fashioned out of cardboard.

11 **Insulate the entire mold** by wrapping it in a large towel and set it aside for at least 24 hours at room temperature before uncovering. Unmold within 3 to 4 days.

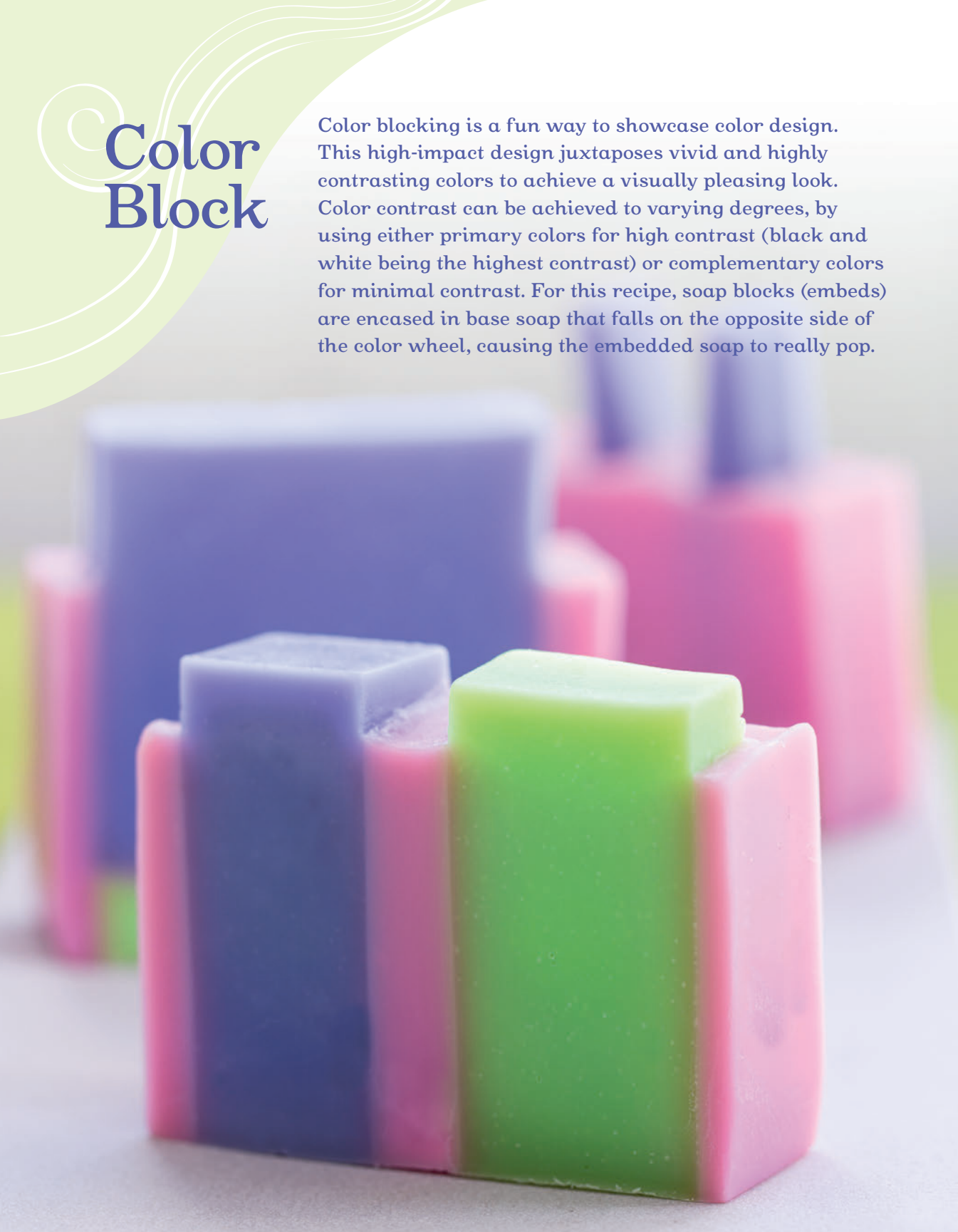
12 **Cut the soap** into bars and cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Alternative Cutting Technique

Instead of cutting the soap like you would a loaf of bread, cut it horizontally to allow the design to really shine. First, cut the molded soap into manageable chunks about 2 1/8 inches wide. Second, turn each chunk on its side and cut it in half. The result is a set of visually stunning bars!

Color Block

Color blocking is a fun way to showcase color design. This high-impact design juxtaposes vivid and highly contrasting colors to achieve a visually pleasing look. Color contrast can be achieved to varying degrees, by using either primary colors for high contrast (black and white being the highest contrast) or complementary colors for minimal contrast. For this recipe, soap blocks (embeds) are encased in base soap that falls on the opposite side of the color wheel, causing the embedded soap to really pop.



Approximately 20 bars

Stage 1: Make the Embeds

Lye-Water Amounts

4.7 ounces sodium hydroxide (lye)
10.87 distilled water

Base Ingredient Amounts

10.9 ounces palm oil
10.9 ounces coconut oil (76°F)
11.2 ounces canola oil

Colorants

9 mL diluted Citrus Green LabColor
12 mL diluted Royal Blue LabColor
(See Working with LabColors, page 44.)

Fragrance

4 ounces fragrance oil blend made of:

- 1 ounce Spearmint essential oil
- 1 ounce Patchouli fragrance oil
- 2 ounces Pink Grapefruit fragrance oil

Equipment

- Standard equipment (see list on page 21)
- 12-bar silicone mold

Make the Soap Mixture

1 **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.

2 **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the canola oil.

3 **When the oils and the lye-water** are both below 130°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, about 2 minutes.

4 **Split the batch** into two halves. Each half will be about 3 cups.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

5 **Color one batch** with the diluted Citrus Green LabColor and the other with the diluted Royal Blue LabColor. Use a whisk to mix in the color so as not to accelerate trace.

6 **Add 1.2 ounces** of the fragrance oil blend to each half of the soap batter. Use a whisk to mix in the fragrance so as not to accelerate trace. Reserve the remaining blend for Stage 2 of the recipe.

Pour into Molds

7 **Pour so that each batch** fills six cavities.

Final Steps

8 **Spray the soap** with 91% isopropyl rubbing alcohol two or three times over a 90-minute period to help decrease soda ash, then cover with either plastic wrap or a lid fashioned out of cardboard.

9 **Insulate the entire mold** by wrapping it in a large towel and set it aside for at least 24 hours at room temperature before uncovering. Unmold within 4 days and cut into fun and interesting shapes for a more detailed design (if desired).

10 **Move on to stage 2** as soon as possible after unmolding. Fresh soap works best for this embedding technique.

Stage 2: Make the Filler

Lye-Water Amounts

3.9 ounces sodium hydroxide (lye)
8.9 ounce distilled water

Base Ingredient Amounts

8.1 ounces palm oil
8.1 ounces coconut oil (76°F)
0.8 ounce palm kernel flakes
0.8 ounce castor oil
8.1 ounces canola oil
1.1 ounces sweet almond oil

Colorant

18 mL diluted Fuchsia LabColor
(See Working with LabColors, page 44.)

Fragrance

Remaining blend from Stage 1

Equipment

- Standard equipment (see list on page 21)
- 5-pound wood log mold with liner

Prepare the mold. Insert the plastic liners that come with the mold. If you are an extra clean soaper, you can line the mold with freezer paper (shiny side out) prior to putting the plastic liners in place.

Make the Soap Mixture

1 **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.

2 **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Melt and add the palm kernel flakes. Add the castor and canola oils. Add the sweet almond oil. Reheat if needed.

3 **Because of the palm oil** and palm kernel flakes, this recipe does better just a little bit warmer than some recipes. When the oils and the lye-water are both below 130°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, about 2 minutes.

4 **Color the batch** with Fuchsia LabColor. Add all of the remaining fragrance oil blend from Stage 1. Use a whisk to mix in the color and fragrance so as not to accelerate trace.

Pour into Mold

5 **Pour a thin layer** of colored, scented soap batter into the mold (5a on next page).

Arrange the blocks made in stage 1 in stacks, rows, or lines in the 5-pound wood log mold (5b). The more interesting the pattern, the better.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

6 **Carefully pour** the remaining soap batter into the mold around the soap blocks, taking care to not disturb the design.

Final Steps

7 **To help decrease soda ash formation,** spray the entire surface with 91% isopropyl rubbing alcohol two or three times over a 90-minute period, then cover the mold with either plastic wrap or a lid fashioned out of cardboard.

8 **Insulate the entire mold** by wrapping it in a large towel and set it aside for at least 24 hours at room temperature before unmolding. Unmold within 3 to 4 days.

TIP: The embeds stick out over the top of the mold, so before insulating, fold a piece of cardboard in half and create a tent over the soap before draping the towel around it.

9 **Cut the soap** in a way that takes the most advantage of the embedded design. For example, cut the embeds that stick out in half so that each bar gets an interesting design. Allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Different molds have different ways of releasing the soap. With this model, slide the bottom off first, then let the soap pull free of the mold before carefully loosening the liner to release the soap.

Stained Glass

Making melt-and-pour soap is a fun alternative to using the cold-process method, and it has the striking characteristic of being clear rather than opaque. In this recipe, a layer of brightly colored melt-and-pour soap is featured on an uncolored cold-process soap base; the result is reminiscent of stained glass.

Because of its high glycerin content, melt-and-pour soap has a tendency to sweat, so it is important to use a specially formulated low-sweat melt-and-pour base for this technique. Remember that although there's no lye involved, melt-and-pour soap can be hot enough to scald the skin.

Approximately 18 bars

Stage 1: Make the "Glass"

Base Ingredient Amounts

20 ounces clear low-sweat melt-and-pour base

Colorants

3 mL diluted Emerald LabColor

3 mL diluted Blue Mix LabColor + 1 mL diluted Emerald LabColor

2 mL diluted Orange LabColor + 3 mL diluted Melon Red LabColor

2 mL diluted Easter Purple LabColor

2 mL diluted Pinkberry Sherbet LabColor

(See Working with LabColors, page 44.)

Equipment

- Standard equipment (see list on page 21)
- Five 8 × 8-inch silicone baking molds

Make the Soap Mixture

1. **Cut the soap base** into 1- to 2-inch cubes. Using a heat-safe container, melt the cubes in the microwave on 30-second bursts, taking care not to boil the soap.
2. **Once the soap is fully melted,** split it into five parts, each weighing 4 ounces. Color each batch with one of the glass colors.

TIP: If you don't have enough molds, you can make these colors in separate batches.

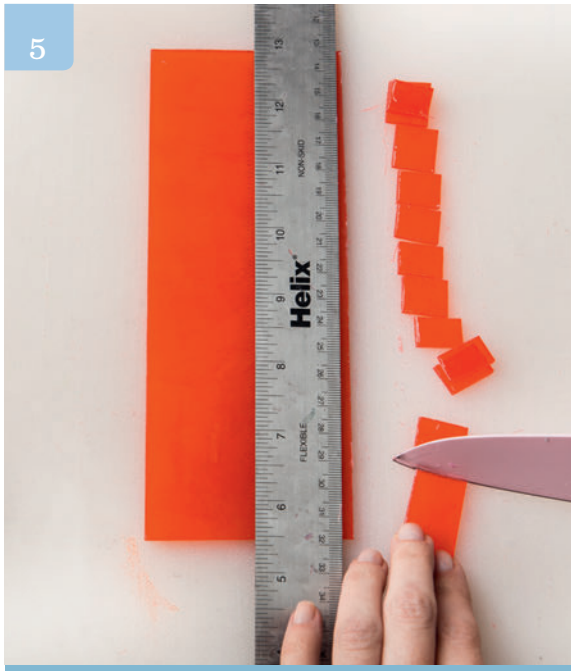
Pour and Cut

3. **Pour each color** into one of the silicone baking molds. Spray each color with rubbing alcohol to dissipate any bubbles that may have formed. Leave the molds uncovered and undisturbed for at least 30 minutes, until soap is fully solid and ready to pull out of the molds and cut. This may take up to two hours, depending on the temperature the soap was poured at and the temperature in your soaping area.

4. **Carefully unmold each color** and lay the pieces on a flat surface. Leave uncovered and undisturbed in the least humid room in your home for at least 24 hours to reduce sweating.
5. **Cut the soap glass** into small pieces with a sharp, unserrated knife. The shape of the pieces determines the design of the soap, so for a more uniform look, cut all squares. If you're interested in an abstract look, cut random pieces and shapes. In either case, each piece should be no more than ½ inch at its widest part. You will get approximately 50 small pieces of soap for each color. Set the pieces aside and continue to the next stage.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.



Stage 2: Make the Base

Lye-Water Amounts

10.0 ounces sodium hydroxide (lye)
24.8 ounces distilled water

Base Ingredient Amounts

11.3 ounces palm oil
12.7 ounces coconut oil (76°F)
2.3 ounces castor oil
18.7 ounces canola oil
30.0 ounces rice bran oil

Fragrance

5.0 ounces Pineapple Cilantro fragrance oil

Equipment

- Standard equipment (see list on page 21)
- 18-bar birch-wood mold, lined (or any wide, flat mold with the same capacity)

Make the Soap Mixture

1 **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.

2 **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the castor, canola, and rice bran oils.

3 **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped

in the blades. **Do not turn on the stick blender until it is fully immersed.** Add the Pineapple Cilantro fragrance oil and continue to stick-blend until thick trace, similar to a refrigerated pudding. The soap needs to be thick enough to suspend the melt-and-pour soap design on top.

Pour and Design

4 **Pour the soap** into the mold. Tamp the mold on the work surface to remove any air bubbles and create a smooth, flat surface.

5 **Arrange the melt-and-pour soap** pieces on top of the soap base. You can use a planned and strategic pattern, or you can scatter the pieces in a totally random fashion. Leaving a small line of the base showing between the pieces gives the stained-glass effect.

Final Steps

6 **This soap** does not need to be insulated. If the soap gets too hot during gel phase, it may melt the design (which is an interesting look but not what we are going for). Let the soap sit for 1 to 2 days, uncovered, to prevent gel phase and any condensation from forming, before unmolding it.

7 **Cut the soap** into bars, taking the pattern into consideration to ensure the maximum effect. Allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

6

Creative Molds

The local grocery store is a gold mine for soapmaking materials. For one thing, you can easily find basic supplies such as olive oil. You can also experiment with food-based colorants and additives such as spices and coffee (see Inspired by Food, page 120).

One bonus of grocery shopping is an endless supply of free molds: milk cartons, yogurt cups, even takeout containers. Of course, any food container must be thoroughly washed, rinsed well, and let to dry completely before being used to make soap.

Beyond the grocery store, you can find potential molds at the shoe store (a shoebox makes a great mold) and even at the hardware store (a piece of PVC pipe makes an unusual mold). Or invest in something special, like the silicone cupcake molds shown below and used to make the fancy soaps on page 114.

Milk-Carton Mica Bars

In addition to being a wonderful cooking and salad dressing oil, olive oil also creates an exceptionally mild and lasting bar of soap with a soft, stable lather and gentle cleansing power. Don't worry about splurging on a fancy extra-virgin variety though! If you don't mind a slight yellowish or greenish tint in your soap base, a less refined grade of olive oil will work perfectly well. Soap made with 100 percent olive oil goes by the name castile, while soap containing over 60 percent is affectionately referred to as bastile.

In this case, a wax-lined milk carton serves as the mold, but most any similar carton will do the trick. Think of all of the products that are taking up space in your next favorite soap mold!

Approximately 9 bars

Lye-Water Amounts

3.4 ounces sodium hydroxide (lye)
9.0 ounces distilled water

Base Ingredient Amount

27.0 ounces olive oil

Colorants

¼ teaspoon Cappuccino Mica
¼ teaspoon Titanium Dioxide
¼ teaspoon Copper Sparkle Mica

Fragrances

1.0 ounce Baby Rose fragrance oil
0.75 ounce Dark Rich Chocolate fragrance oil

Equipment

- Standard equipment (see list on page 21)
- Half-gallon milk carton
- Mesh tea ball (or any fine mesh sifter/strainer)

Prepare the mold. Cut one long side of the milk carton off to create the mold. Wash and dry the mold thoroughly.

Make the Soap Mixture

1. **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.
2. **When the lye-water** is below 120°F, add the lye-water to the olive oil, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles.
3. **Split off 1.5 cups of soap** and color with the Cappuccino Mica using a whisk to blend. Add the Dark Rich Chocolate fragrance oil. Put the stick blender in the bowl to the bottom and tap it to release any air bubbles trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend to a medium trace (the consistency of cake batter).

4. **Color the remaining soap** with the Titanium Dioxide. Add the Baby Rose fragrance oil. Put the stick blender in the bowl to the bottom and tap it to release any air bubbles trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend to a medium trace (the consistency of cake batter).

Pour and Layer

5. **Pour the white soap** into the milk carton mold. Tamp the mold firmly on the work surface once or twice to remove any air bubbles.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

6 **Using a spatula,** pour the brown layer slowly, with the spatula underneath the pouring spout or lip so that the second layer does not break through the first. If the brown soap has gotten too thick while sitting, give it a firm stir with a whisk to loosen it back up.

7 **Put the Copper Sparkle Mica** in the strainer and gently shake it over the top of the soap.

8 **Take a deep breath,** close your eyes, and blow over the top of the soap. The pressure from your breath will ensure that the entire surface of the soap is coated nicely with this subtle color.

Final Steps

9 **Cover with a lid** fashioned out of cardboard.

10 **Insulate the entire mold** by wrapping it in a large towel and set it aside for at least 24 hours at room temperature before unmolding. Unmold within 3 to 4 days.

11 **Cut the soap** into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

TIP: In this instance, you do not want to spray your molded soap with alcohol. It makes the mica soggy, which gives an interesting effect but not one we're going for here.

Yogurt-Tub Swirl

Yogurt soap makes a lovely facial bar because the naturally occurring lactic acid in yogurt is a gentle exfoliant. Its high zinc content can help fight acne, and its natural antibacterial qualities and high fat content are great for skin as well.

Making soap with yogurt requires some caution, because its high fat content may cause the batter to scorch, discoloring the mixture and creating a unique odor that is best avoided. To reduce this possibility, the yogurt is added at trace instead of to the lye-water. In order not to produce a super-soft bar, you must reduce the amount of lye-water in the recipe by the amount of the yogurt; that has already been done for you in this recipe.

This recipe calls for fragrance oils that are high in vanillin, the chemical compound used to create vanilla fragrance. Vanillin also has a tendency to discolor soap batter over time. This recipe uses that tendency to an advantage in the design of this soap by creating a reverse swirl.

51 ounces of soap; actual yield depends on containers

Lye-Water Amounts

4.8 ounces sodium hydroxide (lye)
8.7 ounces distilled water

Base Ingredient Amounts

8.8 ounces coconut oil (76°F)
26.3 ounces olive oil
2.9 ounces whole-milk yogurt (plain)

Colorant

1 teaspoon Titanium Dioxide
1½ tablespoons sunflower oil (or other liquid oil)

Fragrance

1 teaspoon cocoa powder
1.0 ounce Hot Cocoa fragrance oil
1.0 ounce Vanilla Select fragrance oil

Equipment

- Standard equipment (see list on page 21)
- Mini-mixer or latte frother
- A variety of clean yogurt containers, assorted sizes

Prepare the colorant. Prior to starting the soapmaking process, mix the Titanium Dioxide in the sunflower oil, using the mini-mixer. Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin, or you'll stir up a messy cloud of pigment. Mix the colorant thoroughly for the most even color results.

Make the Soap Mixture

1. **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.
2. **Melt the coconut oil** and combine with the olive oil.
3. **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Note: The lower temperature for the lye water is to help prevent the milk in the yogurt from scorching and smelling bad.
4. **Add the yogurt.** Put the stick blender to the bottom of the bowl and tap it to release any air bubbles trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until just incorporated and there are no yogurt lumps.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

5 **Split off 1 cup of soap,** and color with 1 teaspoon of the Titanium Dioxide mixture. Use a whisk to blend in the color so that you don't accelerate trace too much.

6 **Color the remaining soap** (about 5 cups' worth) with the cocoa powder, again using a whisk to incorporate the color. If the powder doesn't mix in easily, give a couple of quick bursts with the stick blender — but not too much since you don't want to thicken the trace.

7 **Add the fragrance oils** to the soap colored with the cocoa powder. Stick-blend or whisk until you reach a medium trace, or about the consistency of cake batter. If the white soap is a bit thin, hit it with the stick blender until it also reaches a medium trace.

Pour and Swirl

8 **Pour the white soap** into the cocoa powder soap, in four separate and distinct areas of the bowl. Reserve about 25 percent of the white soap for later. Pour from a high vantage point so that the soap you are pouring sinks deeply into the soap in the container.

9 **Take a swirl tool** (such as a skewer or chopstick) and run it through the soap once in a circle, hitting each of the entry points of the white soap.

10 **Pour the soap batter** into the yogurt containers. You can fill them as high as you'd like, but be sure to leave about ¼ to ½ inch at the top for use in unmolding.

11 **Using the reserved white soap,** create S-curves on the top of the soap, pouring with the container close to the surface of the soap so that the white soap does not sink.

12 **Take the swirl tool** and drag S-curves in the opposite direction of the white S-curves to create a swirl on top of the soap.

Final Steps

13 **Spray the exposed surface** of each soap with 91% isopropyl rubbing alcohol two or three times over a 90-minute period to help decrease soda ash. Leave uncovered and do not insulate. Heat may cause the milk proteins in the yogurt to smell funny and turn bright yellow.

14 **Unmold** within 3 to 4 days.

15 **Using a non-serrated knife,** cut the soap into hand-sized bars. Vertical and horizontal cuts produce different looks, so try both.

16 **Allow soap to cure** in a well-ventilated area for 4 to 6 weeks, turning the soaps over every few days to ensure that they cure evenly.

Cylinder-Pour Goat Milk

Gentle and nourishing, milk-based soaps have a high fat content that helps moisturize skin. Milk's natural lactic acid promotes cell turnover, leaving skin soft and supple. Goat milk soap is particularly beneficial. Because the fat in the milk can weigh down bubbles, milk soaps often produce a creamy, if small, lather.

Powdered goat milk can be found in health food stores or online. You could use fresh goat milk instead. Because this design is quite intricate, use extra-virgin olive oil (as opposed to pomace) to ensure you have plenty of time to work with the batch. Pomace moves faster in recipes than pure virgin olive oil does.

Approximately 16 bars

Lye-Water Amounts

4.8 ounces sodium hydroxide (lye)
11.6 ounces distilled water

Base Ingredient Amounts

5.0 ounces goat milk slurry (2 ounces powdered goat milk + 3 ounces distilled water)
7.0 ounces palm oil
7.0 ounces coconut oil (76°F)
2.5 ounces sweet almond oil
10.5 ounces canola oil
1.0 ounces castor oil
3.5 ounces extra-virgin olive oil
3.5 ounces rice bran oil

Colorants

1 teaspoon Brown Oxide
1 teaspoon Green Chrome Oxide
1 teaspoon Ultramarine Pink Oxide
1 teaspoon Titanium Dioxide
4 tablespoons sunflower oil (or other liquid oil)

Fragrances

3.0 ounces essential oil blend made of:

- 1 part Patchouli essential oil (0.75 ounces)
- 1 part Peppermint 2nd Distillation essential oil (0.75 ounces)
- 2 parts Pink Grapefruit fragrance oil (1.5 ounces)

Equipment

- Standard equipment (see list on page 21)
- Mini-mixer
- 12-inch long piece of 3¼-inch diameter PVC pipe with end cap
- Optional: Mold liner, plastic wrap, rubber band

TIP: You definitely want some sort of coating on the inside of the mold, so if you don't have or don't want to purchase the mold liner, you can use 1 tablespoon cyclomethicone or mineral oil to prep the mold. Cyclomethicone is an unsaponifiable silicone that coats the inside of the mold so that the soap releases more easily. Mineral oil also works if you cannot find cyclomethicone via mail order or Internet sources.

Prepare the goat milk slurry. Prior to starting the soapmaking process, mix 2 ounces powdered goat milk in 3 ounces distilled water, ensuring that all clumps are fully mixed. A mini-mixer will help with this, but make sure to saturate the powder in the water before you turn on the mixer or you'll get a poof of powder in the air.

Prepare the colorant. Prior to starting the soapmaking process, mix each color in 1 tablespoon of sunflower oil, using the mini-mixer. Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin or you'll stir up a messy cloud of pigment. Mix each colorant thoroughly for the most even color results.

Prepare the mold. Insert the mold liner. Attach the end cap to the PVC pipe. (For an extra-tight fit, place plastic wrap over the end of the pipe and secure it with the rubber band; then attach the fitting.) If you aren't using a mold liner, coat the inside right before you begin making the soap mixture by drizzling 1 tablespoon of cyclomethicone or mineral oil around the inside of the pipe and rotating it to coat the entire inner surface.

Make the Soap Mixture

1. **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.
2. **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Stir in the sweet almond, canola, castor, olive, and rice bran oils.
3. **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles.
4. **Put the stick blender** to the bottom of the bowl and tap it to release any air bubbles trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend or whisk in to light trace, then add the goat milk slurry and stick-blend or whisk until just incorporated.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

5 **Split the batch** into 4 equal parts, about 1.5 cups each.

6 **Color the split batches** as follows.

- 1 teaspoon of the Brown Oxide mixture in one batch
- 1 teaspoon of the Green Chrome Oxide mixture in the second
- 3 teaspoons of the Ultramarine Pink mixture in the third
- 2 teaspoons of Titanium Dioxide mixture in the fourth

Switch to a whisk to stir colorants in and keep the soap from accelerating too much. You want to maintain medium trace (the consistency of cake batter).

7 **Add 0.75 ounce** of the essential oil blend to each of the split batches. Use a whisk for this step as well, and, again, try not to let the soap go past a medium trace.

Pour and Layer

8 **Decide on a color order** you like and line up the colored soap batters. Starting with the first color, pour a little bit into the mold, then try to hit the center of that soap with the second color, and again with the third and fourth. To get a uniform pour, try counting to 3 while pouring each color. Or, for a totally different look, vary the amount of soap you pour each time.

Cylinder-Pour Goat Milk

9 **Repeat the preceding step,** alternating pours until the mold is full. You should have enough batter to make approximately eight pours of each color.

Final Steps

10 **Do not insulate this mold.** Gel phase can make the goat milk smell funny and turn yellow. Let soap sit in the mold for 3 to 4 days before unmolding. If it's not ready to unmold, it won't start to release. If the soap does not come out easily, you can freeze the entire tube overnight and try again in the morning.

11 **Unmold the soap** by pulling the end cap off the PVC pipe and carefully peeling the liner away. If you used cyclomethicone or mineral oil, push the soap out of either end of the mold using a soup can covered with a dish towel. Be careful that you don't push too hard — you don't want your soap to go shooting across the floor!

12 **Cut the soap** into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Shoebox In-the-Pot Swirl

Pretty much any household object that has four sides and a bit of give can make a great soap mold. This recipe uses a shoebox to teach the concept of tailoring a recipe for any size of mold. Depending on the size of the box, the recipe yield will vary. Measure the dimensions of the shoebox, and use this formula to determine how much of the recipe to make:

L x W x H x 0.4 = ounces of oils needed

If you adjust the recipe given here, which halfway fills a shoebox measuring 11 x 8½ x 4 inches, run your amounts through a lye calculator before beginning. Adjust your fragrance amounts to be about 0.7 ounce per pound of finished soap. Colorants are much trickier to adjust because usage rates vary so much depending on the type used. When in doubt, do a small test batch.

With a large mold like this, an in-the-pot swirl technique is a great design option. As you cut the molded soap, each bar looks different. A top layer of lavender buds adds interest and completes the look.

Approximately 28 bars

Lye-Water Amounts

9.74 ounces sodium hydroxide (lye)
25.7 ounces distilled water

Base Ingredient Amounts

39.0 ounces olive oil
39.0 ounces rice bran oil

Colorants

2 teaspoons Titanium Dioxide
2 teaspoons Ultramarine Violet
4 tablespoons sweet almond oil (or other liquid oil)

Fragrances

1 ounce Lavender Grade 1 buds
5 ounces Lavender essential oil

Equipment

- Standard equipment (see list on page 21)
- Mini-mixer
- Shoebox (11 × 8½ × 4 inches)
- Plastic garbage bag or plastic drop cloth

Prepare the colorant. Prior to starting the soapmaking process, mix each color in 1 tablespoon of sweet almond oil, using the mini-mixer. Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin or you'll stir up a messy cloud of pigment. Mix the colorants thoroughly for the most even color results.

Prepare the mold. Line your shoebox with the garbage bag or plastic drop cloth. Use a large, solid piece of plastic so that there are no seams and therefore no leaks.

Make the Soap Mixture

1. **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.
2. **Combine the olive** and rice bran oils.
3. **When the oils and lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Add 1½ teaspoons of the Titanium Dioxide mixture. Stick-blend until light trace (the consistency of a melted milkshake) is achieved, about 2 minutes.
4. **Pour 3 cups** of the soap batter into a separate container. Color this 3-cup batch with 2½ tablespoons of the Ultramarine Violet mixture.
5. **Color the remaining soap** with the last of the Titanium Dioxide mixture.
6. **Divide the Lavender essential oil** in half and add it to each of the batches; stick-blend each batch until a medium trace (the consistency of cake batter) is achieved.

Pour and Swirl

7. **Pour the Ultramarine Violet batch** into the white batch in four separate entry points, pouring about an equal amount

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

of soap into each one. Reserve about ⅛ to ¼ cup of the violet soap batter.

8 **Pour the reserved Ultramarine Violet** soap batter into the bottom of the mold, using a random motion so that you add visual interest.

9 **Using a swirl tool** (such as a skewer or chopstick), swirl the soap in the bowl using a circular motion; take care to swirl directly through the entry points you made with the violet soap. Make two complete circles only. You want the soap to swirl, but not to mix together.

10 **Pour the soap into the mold.** You can aim the pour in one spot for the duration, or pour around the mold. Either way will get you a distinct look. Pouring the soap will automatically swirl the soap. No two batches will look alike.

Final Steps

11 **Sprinkle the lavender buds** on top of the soap. Don't be shy; some of the buds will sink into the soap a bit, and you want a layer to stay on top. Don't spray with alcohol as it makes the herbs soggy.

12 **Let soap sit** 3 to 4 days or until it is ready to be unmolded. (Because of the high volume of olive oil, this soap takes longer to set up than others.) This recipe does not need to be insulated.

13 **Cut the soap** into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Cupcake Cuties

You don't have to cut soap into bars in this recipe because you pour the base into cupcake molds. This recipe lets you play with temperature to create a texture that mimics soft and fluffy frosting. It also uses the WYSIWYG (what you see is what you get) technique for coloring the frosting. The result is a fully functional handmade soap that closely resembles a delicious cupcake!

12 cupcake soaps

Stage 1: Make the "Cake"

Lye-Water Amounts

5.1 ounces sodium hydroxide (lye)
12.6 ounce distilled water

Base Ingredient Amounts

5.7 ounces palm oil
6.5 ounces coconut oil (76°F)
1.2 ounces castor oil
9.5 ounces olive oil
15.2 ounces rice bran oil

Fragrances

2.6 ounces Chocolate Cake fragrance oil blend made of:

- 1 part Dark Rich Chocolate fragrance oil
- 1 part Vanilla Select fragrance oil

Note: Though the soap batter will initially look light, this fragrance oil blend will discolor it to make the cupcakes look like chocolate.

Equipment

- Standard equipment (see list on page 21)
- Two 6-cupcake silicone baking molds (or one 12-cup one)

Make the "Cupcake" Soap Mixture

1. **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.
2. **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the castor, olive, and rice bran oils.
3. **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, about 2 minutes.
4. **Add the Chocolate Cake fragrance oil blend.** Continue blending with the stick blender to achieve a thick but pourable trace.

Pour into the Molds

5. **Pour the mixture** into the molds, aiming for the center of each cavity and creating a slight mound in the center of each soap.
6. **Carefully set the molds aside** and move on to Stage 2.

The batter will look more like vanilla than chocolate but will quickly discolor once poured into the molds.

Stage 2: Make the "Frosting"

Lye-Water Amounts

2.5 ounces sodium hydroxide (lye)
5.6 ounces distilled water

Base Ingredient Amounts

10.4 ounces palm oil
5.2 ounces coconut oil (76°F)
1.3 ounces olive oil

Colorants

3–9 mL diluted Tropical Pink LabColor
3–9 mL diluted Canary LabColor
3–9 mL diluted Easter Purple LabColor
(See Working with LabColors, page 44.)

Fragrance

1.2 ounces Summer Fling fragrance oil

Equipment

- Standard equipment (see list on page 21)
- 4 frosting bags with tips
- Hand or stand mixer

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

Make the "Icing" Soap Mixture

1 **Add the lye to the water** (never the other way around), stir gently, and set aside until clear.

SPECIAL STEPS FOR LYE-WATER

Before using it in this recipe, the lye-water needs to cool to 60°F. This can be achieved in any of several ways:

- Make it a day ahead of time. Let it sit out in a cool, out-of-the-way place with a big sign that says: POISON: DO NOT TOUCH.
- Chill it in a fridge that is not used for food storage. If you don't have a nonfood fridge, put the lye-water in a fully enclosed container with clear signs that say POISON: DO NOT TOUCH. If this is not possible, see the next two suggestions.
- Put the container in an ice bath.
- Add the lye to ice cubes measured as the liquid weight. This means freezing 5.6 ounces of distilled water and add the lye directly onto the ice. The chemical reaction will melt the ice cubes.

If the lye-water must be left unattended for any length of time, be sure to label it clearly as poison and not for consumption.

2 **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the olive oil. Allow the oils to cool to approximately 70 degrees or below. You can put the oils in the fridge to speed this process up. The oils will be a creamy solid at this temperature.

3 **Using the stand or hand mixer,** whip the cooled coconut and palm oils, stopping the mixer periodically to scrape the bottom and sides of the bowl with a spatula to incorporate all the oil.

4 **With the mixer on low speed,** slowly and carefully add the cooled lye-water to the whipped oils in small increments, pouring slowly along the side of the bowl to avoid backsplash. Stop the mixer periodically to scrape the bottom and sides of the bowl with a spatula to incorporate all the oil.

TIP: Work slowly and methodically. It is easy to have the lye-water splash during this process.

5 **Once the lye is mixed in** and the batter is fluffy again (10 to 15 minutes), add the Summer Fling fragrance oil on low speed. Once the fragrance is incorporated, continue whipping on medium to high until the frosting is holding its peaks.

6 **Split the frosting into four parts.** Leave one batch uncolored. Color the other three batches with the LabColors, adding them a few drops at a time until your find your ideal color. Use a whisk to mix in the colors.

7 **Using a spatula, scoop the batches** of frosting into the frosting bags. To frost the cupcakes, start in the middle and work toward the outside in a circular motion. The mounds in the center of the soap cakes will help with the shape of the frosting.

Once you reach the outside, head back into the middle with the frosting to give the topping shape. Toward the center of the cake (once the rest is covered), pause for a second while still squeezing the frosting to finish with a nice peak.

Final Steps

8 **Spray the exposed surface** of each soap with 91% isopropyl rubbing alcohol two or three times over a 90-minute period to help decrease soda ash.

9 **Allow the soap cupcakes** to sit in the molds for 2 to 4 days before unmolding.

10 **Allow to cure** in a well-ventilated area for 4 to 6 weeks, ensuring the bottoms of the cupcakes are elevated somewhat to allow for airflow. A baking rack works perfectly!

CHAPTER 8

Inspired by Food

The lines between yummy food and useful soap become blurred when we take common food ingredients and turn them into delicious and eye-pleasing soapy creations. From wine and beer to coconut milk and avocados, you have many options from the kitchen cupboard that add nourishing and skin-loving ingredients to your soap.

Pumpkin In-the-Pot-Swirl

Canned pumpkin is available year-round, but availability of fresh pumpkins peaks in the fall, especially near Halloween. In addition to making for a delicious pie, pumpkin contributes to a skin-loving bar of soap. It is high in antioxidants, particularly vitamin E, as well as fatty acids. Antioxidants help stabilize cell-damaging free radicals, and vitamin E can help reduce some symptoms of psoriasis.

Approximately 16 bars

Lye-Water Amounts

- 7.2 ounces sodium hydroxide (lye)
- 15.0 ounces distilled water

Base Ingredient Amounts

- 16.0 ounces palm oil
- 16.0 ounces coconut oil (76°F)
- 2.0 ounces castor oil
- 16.0 ounces olive oil
- 3.0 ounces pumpkin purée (fresh or canned)

Fragrance

- 3.5 ounces Pumpkin Spice fragrance oil

Colorants

- 3 teaspoons Titanium Dioxide
- 3 tablespoons sunflower oil (or other liquid oil)
- ½ teaspoon Copper Sparkle Mica

Equipment

- Standard equipment (see list on page 21)
- Mini-mixer
- Vertical mold

Prepare the mold. Insert the liners that come with the mold. If you are an extra clean soaper, you can line the mold with freezer paper (shiny side out) prior to putting the liners in place.

Prepare the colorant. Prior to starting the soapmaking process, mix the Titanium Dioxide in the sunflower oil, using the mini-mixer. Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin or you'll stir up a messy cloud of pigment. Mix the colorant thoroughly for the most even color results.

Make the Soap Mixture

1. **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.
2. **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the castor and olive oils.
3. **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Add the pumpkin purée and stick-blend until a light trace (the consistency of a melted milkshake) is reached, about 2 minutes.
4. **Split the batch** by pouring 1.5 cups of soap into a separate container. Color this batch with 1 teaspoon of the Titanium Dioxide mixture, using a whisk to incorporate the color so as not to accelerate trace.
5. **Take ½ cup** (4 ounces) of soap from the larger, uncolored batch, and add to it the remaining Titanium Dioxide mixture. Stir with a spoon. Leave this portion unscented.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

6 **Color the remaining soap** with the Copper Sparkle Mica, using a whisk to incorporate it, then add the Pumpkin Spice fragrance oil, again using the whisk to keep trace from accelerating.

Pour and Swirl

7 **Start with the 1.5 cups of white soap** and pour from a high vantage point into the copper-colored soap at five separate entry points.

8 **Follow with the 4 ounces** of extra-white soap, pouring into the same entry points created by the larger batch or drizzling on the surface as shown here.

9 **Using a swirl tool** (such as a skewer or chopstick), drag through the entry points of the soap, hitting each one only once. The goal is to swirl the colors without blending them.

10 **Pour the soap** into the vertical mold, where it will naturally create beautiful swirls.

Final Steps

11 **Let soap sit** 3 to 5 days or until it is hard enough to be unmolded. (The mold does not need to be covered or insulated.) Unmold the soap by unscrewing the wing nuts and pulling the plastic-encased soap out. Push and slide the plastic pieces off the soap. Avoid pulling the pieces off as that might tear the surface of the soap.

12 **Cut the soap** into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

11a

b

c

d

e

12

Coconut Milk Bars

Coconut milk is gentle enough to be an excellent additive to facial bars. Its deep cleansing power and high fat content makes it intensely moisturizing without stripping away the skin's natural oils. The coconut oil, along with a high vitamin E content, make this a good choice for those with dry, sensitive, or acne-prone skin.

Approximately 12 bars

Lye-Water Amounts

- 5.0 ounces sodium hydroxide (lye)
- 8.9 ounces coconut water

Base Ingredient Amounts

- 9.0 ounces palm oil
- 9.0 ounces coconut oil (76°F)
- 1.8 ounces olive oil
- 1.8 ounces sweet almond oil
- 3.6 ounces canola oil
- 10.8 ounces rice bran oil
- 3.0 ounces canned coconut milk

Colorants

- 2 teaspoons Tangerine Wow!
- ½ teaspoon Fizzy Lemonade
- 1 teaspoon Titanium Dioxide Pigment
- 3½ tablespoons sweet almond oil (or other liquid oil)
- ⅛ teaspoon Super Pearly White Mica

Fragrance

2.4 ounces fragrance oil blend made of:

- 1 part Fresh Mango fragrance oil (0.6 ounces)
- 1 part Mango Mango fragrance oil (0.6 ounces)
- 2 parts Kumquat fragrance oil (1.2 ounces)

Equipment

- Standard equipment (see list on page 21)
- Mini-mixer
- Mini-whisk
- 50-ounce silicone loaf mold
- 2 large spoons
- Scissor-style mesh tea ball (or any fine mesh sifter/strainer)

Prepare the colorant. Prior to starting the soapmaking process, mix the Tangerine Wow! in 2 tablespoons of the sweet almond oil, mix the Fizzy Lemonade in ½ tablespoon of the sweet almond oil, and mix the Titanium Dioxide in 1 tablespoon of the sweet almond oil, using the mini-mixer. Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin or you'll stir up a messy cloud of pigment. Mix the colorants thoroughly for the most even color results.

Make the Soap Mixture

1 **Add the lye** to the coconut water (never the other way around), stir gently, and set aside until clear.

The lye turns the coconut water a bright orange color. This is normal and does not affect the final color of the soap.

2 **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Stir in the olive, sweet almond, canola, and rice bran oils.

3 **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, about 2 minutes or less.

4 **Add the coconut milk** and fragrance oil blend, and stick-blend or whisk in until just incorporated.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

5 **Split the batch** into three equal parts, each measuring about 2 cups. Color the batches as follows:

- 5 teaspoons of the Tangerine Wow! mixture in one
- ½ tablespoon of the Fizzy Lemonade mixture in the second
- 1 tablespoon of the Titanium Dioxide mixture in the third

Right before pouring each batch, stick-blend it to a thick trace (the consistency of pourable pudding).

Pour and Add Texture

6 **Pour the tangerine-colored batch** into the mold.

7 **Using a spoon,** ruffle up the texture of the layer. Because the soap is at a thick trace, it should be easily moldable. Create ditches and divots in the soap. The more texture, the more visual interest in the final bar.

8 **Pour the lemonade-colored batch** into the mold.

9 **Using a clean spoon,** ruffle up the texture of this layer just like the previous layer.

10 **Pour the white-colored batch** on top.

11 **Using a clean spoon,** push the soap toward the center of the mold lengthwise, creating a "mountain peak" going down the center of the mold.

12 **Dip the end of a spoon** or tip of a mini-whisk into the soap at random intervals, creating mini-peaks on top of the soap. Again, the more mini-peaks the more visual interest!

13 **Open the mesh tea ball** and put ⅛ teaspoon of Super Pearly White Mica in it. Close the clasp and gently shake mica over the top of the soap. Note: You can use an open fine-mesh strainer instead of a tea ball, as shown in the photo. Just be careful when you're shaking mica.

14 **Take a deep breath,** close your eyes or put your goggles on, and blow over the top of the soap. The pressure from your breath will ensure that the entire surface of the soap is coated nicely with a subtle shimmer and that the mica will stay.

Final Steps

15 **Do not insulate this soap.** Gel phase may cause the coconut milk to smell bad and turn odd colors. Spray with 91% rubbing alcohol and let sit out for 1 to 3 days until it is ready to unmold.

16 **Cut the soap** into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Avocado Moisturizing Bars

Avocados are high in vitamins A, D, and E, and also contain high levels of lecithin, potassium, protein, and amino acids. In raw form, they can be used to treat sun-damaged skin. In soap, avocado is beneficial for dry, itchy skin, and its antiwrinkle properties make it a good addition to caring for mature skin.

To ensure against browning, put the soap in the freezer after pouring it into the mold. This will prevent the soap from going through gel phase by keeping the batch cool.

Approximately 20 bars

Lye-Water Amounts

8.2 ounces sodium hydroxide (lye)
15.0 ounces distilled water

Base Ingredient Amounts

8.6 ounces palm oil
14.3 ounces coconut oil (76°F)
5.7 ounces palm kernel flakes
11.4 ounces olive oil
17.1 ounces avocado oil
6.8 ounces avocado slurry (3 ounces ripe avocado, 3.8 ounces distilled water)

Colorants

1½ teaspoons Green Chrome Oxide
2 teaspoons Yellow Oxide
3 tablespoons sunflower oil (or other liquid oil)

Fragrance

3.5 ounces Wasabi fragrance oil

Equipment

- Standard equipment (see list on page 21)
- Mini-mixer
- 5-pound wood log mold
- Large spoon

Prepare the avocado slurry. Add 3 ounces of ripe avocado to 3.8 ounces of distilled water. Stick-blend until well mixed. The texture should resemble a melted milk shake.

Prepare the colorant. Prior to starting the soapmaking process, mix the colorants as follows, using the mini-mixer.

- 1 teaspoon of Green Chrome Oxide in 1 tablespoon of oil
- 1 teaspoon of the Yellow Oxide in 1 tablespoon of oil
- ½ teaspoon of the Green Chrome Oxide plus 1 teaspoon of the Yellow Oxide in 1 tablespoon of oil

Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin or you'll stir up a messy cloud of pigment. Mix the colorants thoroughly for the most even color results.

SOAP SAFELY!

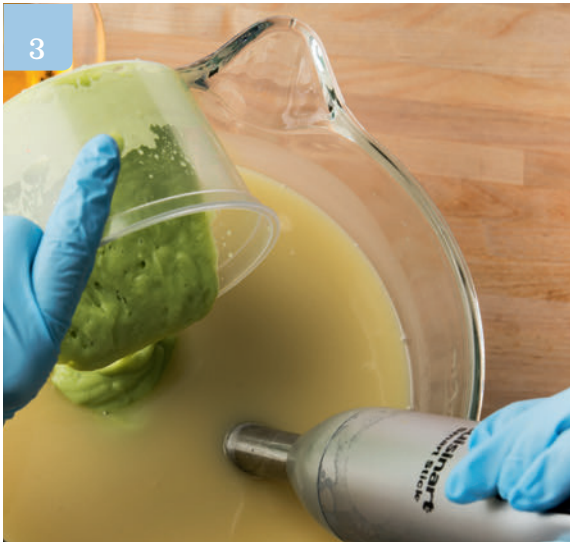
- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

Make the Soap Mixture

1 **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.

2 **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Melt and add the palm kernel flakes. Add the olive and avocado oils.

3 **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick blend to extremely thin trace, then add the avocado slurry and stick-blend until a light trace (the consistency of a melted milkshake) is reached, about 2 minutes.



4 **Split the batch** into three parts: two parts at 4 cups each, one part at 2 cups.

5 **Color each of the batches** as follows.

- 1½ teaspoons of the Green Chrome Oxide mixture to one of the 4-cup batches
- ½ teaspoon of the Green Chrome Oxide plus Yellow Oxide mixture and ½ teaspoon of the Yellow Oxide mixture to the other 4-cup batch
- 2 teaspoons of the Yellow Oxide mixture to the 2-cup batch

Whisk or stick-blend each of the colorants into the soap until incorporated.

6 **Add 1.5 ounces** of the Wasabi fragrance oil to each of the 4-cup batches, and 0.5 ounce of Wasabi fragrance oil to the 2-cup batch. Right before pouring each batch, stick-blend it until a thick trace (the consistency of pourable pudding) is achieved.

Pour and Layer

7 **Pour the 4-cup batch** colored with just the Green Chrome Oxide into the mold. Tamp the mold on the work surface to spread the soap and remove any air bubbles.

8 **Pouring over a spatula** to prevent breakthrough, pour the 4-cup Green Chrome Oxide plus Yellow Oxide batch into the mold. Tamp the mold on the work surface to spread the soap and remove any air bubbles.

9 **Pouring over a clean spoon,** pour the 2-cup Yellow Oxide batch into the mold.

10 **Use the spoon** to mound the soap into a peak that goes down the center of the mold lengthwise.

11 **Insert a swirl tool** (such as a skewer or chopstick) into just the top ½ inch or so of soap. Drag the tool through the heavily traced soap in a pattern to create visual interest. The design is meant to be purely textural, so don't swirl deep enough to hit the other colors.

Final Steps

12 **Spray entire exposed surface** with 91% isopropyl rubbing alcohol two or three times over a 90-minute period to help decrease soda ash. Put the mold into the freezer for 12 hours. This will help the soap keep its color. If the soap gets too hot, the fresh avocado may turn brown in the soap.

13 **Unmold** within 4 days.

14 **Cut the soap** into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Angled-Pour Beer Bars

This soap is made in three stages. To achieve the angled look of this design, each layer of soap needs time to harden enough to withstand the shifting angle of the mold. To do that, you need to make three separate batches from start to finish to allow each previous layer time to set up fully. This recipe also uses fragrance-oil discoloration as a design element. The beer adds to a dense, foamy lather.

Note that we still refer to the lye-liquid combination as lye-water, even though the recipe substitutes beer for water.

Approximately 12 bars

Stage 1: Make the First Layer

Lye-Water Amounts

1.5 ounces sodium hydroxide (lye)
3.6 ounces boiled beer (start with 16 ounces; see page 142)

TIP: A dark beer will affect the color of your soap, so use a blonde beer to allow the design to stand out more.

Base Ingredient Amounts

3.3 ounces palm oil
2.9 ounces coconut oil (76°F)
0.2 ounce castor oil
0.6 ounce sunflower oil
3.7 ounces canola oil
0.3 ounce shea butter (refined)

Fragrance

0.75 ounce Honey Ale fragrance oil

Equipment

- Standard equipment (see list on page 21)
- 3-pound plastic loaf mold
- A cutting board or other implement about 1" thick for propping the mold

Prepare the mold. Prop a soap cutter or other implement under one of the long sides of the mold so that when soap is poured it will fill the opposite side of the mold only.

Boil the beer. Before you can safely add lye to beer, you need to remove the alcohol and the carbonation, both of which can react with the lye and cause a bubbly volcano effect. To do so, boil the beer for about 15 minutes, watching it carefully the entire time so it doesn't foam over.

Half or more of the volume of the beer will be lost during the boil, so start with more than enough to cover the recipe requirements. The 16 ounces of beer called for in this recipe yields the 7.2 ounces that is split between the first two batches.

Once the beer has boiled for 15 minutes, refrigerate it uncovered overnight to ensure that as much of the carbonation and alcohol is lost as possible. Pull the beer out of the fridge at least an hour before you begin making the soap to bring it back to room temperature.

Make the Soap Mixture

1. **Add the lye** to the boiled beer (never the other way around) a little bit at a time, stir gently, and set aside until clear.
2. **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the castor, sunflower, and canola oils. Add the shea butter to the warm oils and stir until melted.
3. **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, 1 to 2 minutes.
4. **Add the Honey Ale fragrance oil** and stick-blend to a medium trace (the consistency of cake batter).

Pour the First Layer

5. **Pour the soap** into the mold, being sure to aim at the edge opposite to the one that is elevated. Leave the soap at an angle and proceed to Stage 2.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

Stage 2: Make the Second Layer

Lye-Water Amounts

1.5 ounces sodium hydroxide (lye)
3.6 ounces boiled beer (see previous page)

Base Ingredient Amounts

3.3 ounces palm oil
2.9 ounces coconut oil (76°F)
0.2 ounce castor oil
0.6 ounce sunflower oil
3.7 ounces canola oil
0.3 ounce shea butter (refined)

Colorant

½ teaspoon Hydrated Chrome Green Oxide
½ tablespoon sunflower oil (or other liquid oil)

Fragrance

0.75 ounce Lemon Earl Grey fragrance oil

Equipment

- Standard equipment (see list on page 21)
- Mini-mixer

Prepare the colorant. Prior to starting the soapmaking process, mix the Hydrated Chrome Green Oxide in the sunflower oil, using the mini-mixer. Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin or you'll stir up a messy cloud of pigment. Mix the colorant thoroughly for the most even color results.

Make the Soap Mixture

1 **Add the lye** to the boiled beer (never the other way around) a little bit at a time, stir gently, and set aside until clear.

2 **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the castor, sunflower, and canola oils. Add the shea butter to the warm oils and stir until melted.

3 **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, 1 to 2 minutes.

4 **Add the Hydrated Chrome Green Oxide mixture** to the soap and stir well. Add the Lemon Earl Grey fragrance oil and stick-blend to a medium trace (the consistency of cake batter).

Pour the Second Layer

5 **Carefully change the angle** of the mold by moving the prop to the other side. It takes 5 to 10 minutes for the first layer to set up, so making the second batch should allow time for the first batch to harden enough to withstand this move, but do work cautiously. It's important to make the layers one right after the other so that the batches stick to each other.

stage 2 continued

6 **Pour the soap** into the mold, aiming at the edge opposite to the one that is elevated. Pour close to the mold or over a spatula to prevent breaking through the first layer. Leave mold at an angle.

Stage 3: Make the Final Layer

Lye-Water Amounts

- 2.0 ounces sodium hydroxide (lye)
- 4.6 ounces distilled water (you can use boiled beer, but water is recommended for a more neutral color)

Base Ingredient Amounts

- 4.2 ounces palm oil
- 3.6 ounces coconut oil (76°F)
- 0.3 ounce castor oil
- 0.7 ounce sunflower oil
- 4.8 ounces canola oil
- 0.4 ounce shea butter (refined)

Colorant

- 6 mL diluted Canary LabColor
- 1½ teaspoons + ¼ teaspoon lemon peel powder (found in grocery stores or online)

Fragrance

- 0.75 ounce Lemongrass essential oil

Equipment

- Standard equipment (see list on page 21)

Make the Soap Mixture

1 **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.

2 **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the castor, sunflower, and canola oils. Add the

shea butter to the warm oils and stir until melted.

3 **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, about 2 minutes.

4 **Add the Canary LabColor** and 1½ teaspoons Lemon Peel Powder to the soap and mix well. Add the Lemongrass essential oil and stick-blend to a medium trace (the consistency of cake batter).

Pour the Final Layer

5 **Slowly and carefully** remove the prop and allow the mold to lie flat (as it normally would). Making this third batch should allow the first and second batches enough time to harden and withstand this move, but do work cautiously. As noted before, it's important to make the layers one right after the other.

6 **Pour the soap** into the mold over a spatula held close to the soap to avoid breaking through the first layers. Once all of the soap is in the mold, gently tamp the mold on the work surface to remove any air bubbles.

7 **Sprinkle the lemon peel powder** over the surface of the soap. Take a deep breath, close your eyes, and blow over the top of the soap. The pressure from your breath will ensure that the entire surface of the soap is coated nicely with this subtle color.

8 **For visual interest,** create peaks in the top of the soap by dipping the tip of a whisk into the soap.

Final Steps

9 **To help decrease soda ash formation,** spray the entire surface with 91% isopropyl rubbing alcohol two or three times over a 90-minute period, then cover the mold with either plastic wrap or a lid fashioned out of cardboard.

10 **Insulate the entire mold** by wrapping it in a large towel and set it aside for at least 24 hours at room temperature before unmolding. Unmold within 4 days.

TIP: If the soap peaks over the top of the mold, fold a piece of cardboard in half and create a tent over the mold, then drape the towel over the cardboard.

11 **Cut the soap** into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Wine Twist

When contemplating a soap recipe, don't overlook the wine rack! Grapes are high in antioxidants, and the sugars created in the winemaking process contribute to a luxurious lather in a bar of soap. But remember that even though wine is being used as an ingredient in this soap, that is not cause for drinking it during the soapmaking process. A clear head is essential to soapmaking.

There are some considerations when working with wine (or other alcoholic beverages) in soap. First, while the wine constituents are beneficial, alcohol is incredibly drying to the skin. Second, if you use wine to make the lye-water, the alcohol may react violently to the lye, causing a bit of a volcanic eruption. For these reasons, it's important to boil off the alcohol before adding the wine to the lye. Expect to lose about 30 percent of the wine's volume to the boil. And third, red wine naturally goes brown or reddish-brown in soap, so be aware of that when planning the overall design of your soap.

Note that we still refer to the lye-liquid combination as lye-water, even though the recipe calls for more wine than water.

A "pouring buddy" — an extra set of hands — is helpful for this recipe but not necessary if you're strong enough to handle pouring both batches at once.

Approximately 16 bars

Lye-Water Amounts

7.2 ounces sodium hydroxide (lye)
1 (750 mL) bottle of boiled red or white wine (see below)
5.0 ounces distilled water

TIP: A cheap bottle of wine will soap just as nicely as an expensive one.

Base Ingredient Amounts

16.0 ounces palm oil
16.0 ounces coconut oil (76°F)
2.0 ounces castor oil
16.0 ounces olive oil

Colorants

1 tablespoon Titanium Dioxide
3 tablespoons sunflower oil (or other liquid oil)
1 teaspoon Merlot Mica

Fragrance

3.5 ounces Berry Wine fragrance oil

Equipment

- Standard equipment (see list on page 21)
- Mini-mixer
- Vertical mold with divider

Prepare the mold. Insert the liners that come with the mold. If you are an extra clean soaper, you can line the mold with freezer paper (shiny side out) prior to putting the liners in place.

Boil the wine. Before using wine in soap, you must boil off as much of the alcohol as possible. Pour the entire bottle into a large pot and bring to a boil. Allow to boil for 10 to 15 minutes. Do not leave unattended, because the liquid will foam up considerably. Weigh the wine after boiling; you can use distilled water to supplement the wine to make a total of 16.5 ounces. The ratio can vary.

TIP: If you want a lighter colored soap, use less wine and more water.

Prepare the colorant. Prior to starting the soapmaking process, mix the Titanium Dioxide in the sunflower oil, using the mini-mixer. Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin or you'll stir up a messy cloud of pigment. Mix the colorant thoroughly for the most even color results.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

Make the Soap Mixture

1 **Add distilled water** to the boiled wine to make a total volume of 16.5 ounces. Slowly add the lye to the water/wine mixture. Add a little bit of lye at a time, stir until dissolved, and then add a bit more, to ensure that the remaining alcohol doesn't react violently with the lye. There will be a distinct (read: awful) smell when the lye is added, which is normal. Set the mixture aside to cool.

2 **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the castor and olive oils.

3 **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, about 2 minutes.


3

4 **Split the batch in half.** No measuring is needed for the split; just eyeball it. To one half, add 3 tablespoons of the Titanium Dioxide mixture and the Merlot Mica. Capture the mica under the stick blender as it enters the soap, and pulse the stick blender until the colorants are just incorporated. Switch to a whisk and mix in half (1.75 ounces) of the Berry Wine fragrance oil.


4

5 **To the other half of the batch,** add the remaining 1 tablespoon of the Titanium Dioxide mixture. Pulse with a stick blender until just incorporated. Switch to a whisk and mix in the other half (1.75 ounces) of the Berry Wine fragrance oil.

Pour and Twist

6 **Ask your "pouring buddy"** to take one of the halves of the soap batch, while you take the other. At the same time, pour both halves into the vertical mold with the divider in place. Tamp the mold on the work surface to remove any air bubbles. You can do this step on your own but it does take some serious core strength. It's important that both sides be poured simultaneously.

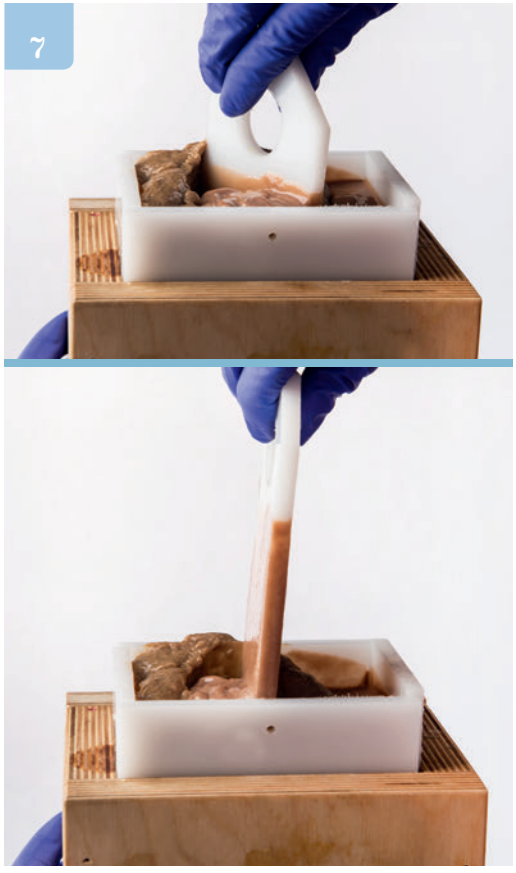
7 **For a fun twist** (literally!) in your soap, turn the divider 360 degrees while it is still in the soap, then slowly pull it straight out (no more twisting on its way out). If there is any soap left over, feel free to pour it into the mold after the divider is out.

Final Steps

8 **Let soap sit** 3 to 4 days or until it is hard enough to be unmolded. You do not need to insulate the mold. Unmold the soap by unscrewing the wing nuts and pulling the plastic-encased soap out. Push and slide the plastic pieces off the soap. Avoid pulling the pieces off as that might tear the surface of the soap. (See photos on page 127.)

9 **Cut the soap** into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

NOTE: Due to the shape of the mold, bubbles will have farther to travel than with other molds; therefore, you may need to pound a bit more.



CHAPTER 10

Exploring Additives

You can use an amazing variety of materials to add interest, texture, color, and variation to a basic bar. When you are thinking about items to add to your soap, be sure to take into account things like the scrubbing factor (after all, we don't want to take off a layer of skin!); skin safety (for example, you wouldn't want to use red-hot chili pepper powder); and whether they will work well in the bath or shower (an unattractive pile of herbs clogging your drain may not be the best of options).

Coffee Grounds

The caffeine in a morning latte is a great pick-me-up. Coffee can also be used in soaps as an energizing additive. As a bonus, the grounds enhance the color of the soap and act as an exfoliator. For more gentle exfoliation, opt for the superfine grind of an espresso-machine blend. For an invigorating scrub, use a coarser blend meant for a drip coffeemaker.

If a full exfoliating bar is too much, try a half-and-half bar, using a divided vertical mold, to give the user a choice when in the shower or bath. In this recipe I used no other colorants besides a fragrance oil known to discolor; here, the fragrance does the design work in addition to smelling great.

A "pouring buddy" — an extra set of hands — is helpful but not necessary if you're strong enough to handle pouring both batches at once.

Approximately 16 bars

Lye-Water Amounts

6.9 ounces sodium hydroxide (lye)
15.8 ounces distilled water

Base Ingredient Amounts

15.8 ounces palm oil
15.8 ounces coconut oil (76°F)
16.3 ounces canola oil

Colorants

1 tablespoon used coffee grounds

Fragrance

3 ounces Turkish Mocha fragrance oil

Equipment

- Standard equipment (see list on page 21)
- Vertical mold with divider

Prepare the mold. Insert the liners that come with the mold. If you are an extra clean soaper, you can line the mold with freezer paper (shiny side out) prior to putting the liners in place.

Make the Soap Mixture

1. **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.
2. **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the canola oil.
3. **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, 1 to 2 minutes.
4. **Split the batch in half** (precise measurement not required). To one half, add 2.5 ounces of the Turkish Mocha fragrance oil. Use a whisk to mix in the fragrance oil to discourage trace from accelerating. This fragrance looks light at first but will discolor to a dark brown over 2 to 4 weeks.
5. **Add the coffee grounds** to the other half of the batch. Add the remaining 0.5 ounce of the Turkish Mocha fragrance oil as well, and mix with a whisk until well incorporated.

NOTE: Splitting the usage rates of the fragrance oil ensures that there is a high contrast and color differentiation between the two halves of the soap.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

Pour into the Mold

6 **If you have a "pouring buddy,"** ask her to take one of the halves of the soap batch, while you take the other. At the same time, pour both halves into the vertical mold with the divider in place. Tamp the mold on the work surface to remove any air bubbles.

NOTE: Due to the shape of the mold, bubbles will have farther to travel than with other molds; therefore, you may need to pound a bit more.

7 **Slowly and carefully** pull the divider straight out of the mold. If there is any soap left over, feel free to pour it into the top of the vertical mold after the divider has been pulled out.

Final Steps

8 **This recipe does not need to be sprayed** with alcohol or covered. Let soap sit 3 to 4 days or until it is ready to be unmolded. Unmold the soap by unscrewing the wing nuts and pulling the plastic-encased soap out. Push and slide the plastic pieces off the soap. Avoid pulling the pieces off as that might tear the surface of the soap. (See photos on page 127.)

9 **Cut the soap** into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Calendula Cleansing Bar

Calendula is a skin-loving additive derived from the flower of a type of marigold (*Calendula officinalis*). It has regenerative and restorative properties in addition to being a natural anti-inflammatory. It acts as a gentle cleanser and is great for those with sensitive skin, maturing skin, or young skin.

There are a couple of ways to incorporate the benefits of calendula into soap. Infusing the herb into oils called for in the recipe is one; another is adding the herb directly to the soap batter. In this recipe, both methods work together to create a bar with a small, nourishing lather and the soothing scent of lemongrass.

Approximately 12 bars

Lye-Water Amounts

5.2 ounces sodium hydroxide (lye)
13.4 ounces distilled water

Base Ingredient Amounts

10.0 ounces calendula-infused sweet almond oil (see page 160)
30.0 ounces olive oil

Fragrance/Additives

2.3 ounces lemongrass essential oil
0.5–0.8 ounce dried calendula petals (about 1 cup by volume)

Equipment

- Standard equipment (see list on page 21)
- Double boiler
- Fine-mesh strainer
- Cheesecloth
- Silicone loaf mold

Make the calendula-infused sweet almond oil. In a double boiler, pour 10.5 ounces of sweet almond oil over 0.3 ounces of dried calendula petals (about ⅓ cup by volume). Turn heat on low and allow to sit for 1 to 4 hours. The longer the infusion sits on the heat, the stronger it becomes. Pour the infusion through a fine-mesh strainer lined with cheesecloth to remove as much of the debris as possible. Infusing slightly more oil than a recipe calls for ensures that the recipe amount is covered, as some oil will be absorbed by the flowers.

Make the Soap Mixture

1. **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.
2. **Combine the olive oil** and 10 ounces of the calendula-infused sweet almond oil.
3. **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, about 2 minutes. Note: Trace may take longer than usual due to the high olive-oil content.
4. **Add the lemongrass essential oil.** Continue blending with the stick blender until a medium trace (the consistency of cake batter) is achieved.
5. **Reserve a couple of tablespoons** from the cup of dried calendula petals to sprinkle over the top of the soap. Add the rest of the petals to the soap batter and stir in well with a whisk or spatula.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

Pour into the Mold

6 **Pour the soap batter** into the silicone loaf mold.

7 **Sprinkle the remaining calendula** on top of the soap for a rustic look. With a gloved hand, press the dried calendula gently into the soap so that it adheres.

Final Steps

8 **Cover the soap** with plastic wrap or a cardboard lid. Insulate the entire mold by wrapping it in a large towel and set it aside for at least 24 hours at room temperature before unmolding. Unmold within 3 to 5 days.

9 **Cut the soap** into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Oatmeal Layers

Oatmeal offers many benefits to skin-care products and is a wonderful addition to soap. In this recipe, oatmeal acts as an exfoliant as well as an anti-inflammatory and antioxidant. A good itch reliever, it can help with dry skin conditions such as eczema and psoriasis, rashes caused by heat or poison ivy, and even bug bites. Oat extract is added for extra soothing and moisturizing properties.

This recipe uses the discoloration caused by the fragrance oil as a design element. The difference between textures of oatmeal plus the contrast in color between the oats and the dark soap make for a visually interesting bar.

Approximately 9 bars

Lye-Water Amounts

- 5.3 ounces sodium hydroxide (lye)
- 12.5 ounces distilled water

Base Ingredient Amounts

- 11.4 ounces palm oil
- 9.5 ounces coconut oil (76°F)
- 0.8 ounce cocoa butter
- 1.1 ounces castor oil
- 3.8 ounces olive oil
- 3.8 ounces rice bran oil
- 7.6 ounces sunflower oil
- 1.0 ounce oat extract
- 0.4 ounce honey
- ½ cup old-fashioned rolled oats (*not* quick oats), ground fine to make ¼ cup
- ¼ cup old-fashioned rolled oats (*not* quick oats), left whole

Fragrances

- 1.2 ounces Oatmeal Cookie fragrance oil blend made of:
  - 1 part Oatmeal, Milk, and Honey fragrance oil
  - 1 part (0.6 ounces) Vanilla Bean fragrance oil)
- 1.0 ounce Almond fragrance oil

Equipment

- Standard equipment (see list on page 21)
- 9-bar birch-wood mold

Make the Soap Mixture

1 **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.

2 **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the cocoa butter. Once the oils are melted, stir in the castor, olive, rice bran, and sunflower oils. The oils may need to be microwaved again later to keep the mixture liquid.

3 **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Pulse the stick blender until oils are just incorporated. Add the honey and the oat extract and stick-blend until a light trace (the consistency of a melted milkshake) is achieved, 1 to 2 minutes.

4 **Split the batch** into two equal parts, each about 3 cups. To one batch, add the Oatmeal Cookie fragrance oil blend and reserve 1 tablespoon of whole oats, then pour the rest into the batch and stir in with a whisk. This layer will darken over the 4 to 6 week cure time.

5 **With the other batch,** stick-blend until a thin to medium trace is achieved. Add the Almond fragrance oil and the ¼ cup of the ground-up oats.

Pour in Layers

6 **Using a stick blender or whisk,** blend the Oatmeal Cookie–scented batch to a thick trace. A pudding-like consistency is needed because this bottom layer must support the second layer. Pour the Oatmeal Cookie–scented batch into the mold. Tamp the mold on the work surface to remove any air bubbles and create a flat surface for the second layer.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

7 **Whisk the Almond-scented batch** if it appears grainy. Pour this second layer onto the first, over a spatula that is close to the first layer in order to prevent breakthrough.

8 **Insert dividers** into the mold.

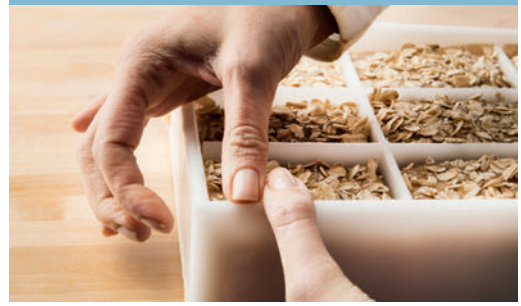
9 **Sprinkle leftover whole oats** over the top of the soap. Once the top of the soap is covered, take a deep breath, close your eyes, and blow over the top of the soap to gently press the oats into the soap batter.

Final Steps

10 **Spray with** 91% isopropyl rubbing alcohol to help decrease soda ash. Cover the mold and insulate with a towel. Place the mold on a slatted shelf or wire rack and allow to sit for 1 to 3 days before unmolding.

11 **Unmold the soap** by twisting and sliding the dividers off. Never pull them, as the soap may tear.

12 **Allow the bars to cure** in a well-ventilated area for 4 to 6 weeks, turning them over every few days to ensure that they cure evenly.



Clay Spoon-Plop

Clays act as detoxifiers and even as light exfoliants in soap. The wide variety of clays available can benefit an array of skin types. Plus, they will naturally color your soap. When adding clays to soap, it's important to use ones that have been purified to cosmetic grade standards. Clays intended for crafts generally are not purified to those standards. Your supplier should be able to answer questions you might have regarding the quality of the clays you are purchasing.

Clays are naturally absorbent, so it's necessary to mix them in water before adding them to soap to prevent the water absorption from accelerating trace or causing the soap to crack.

Approximately 12 bars

Lye-Water Amounts

5.0 ounces sodium hydroxide (lye)
11.6 ounces distilled water

Base Ingredient Amounts

11.2 ounces palm oil
11.2 ounces coconut oil
1.4 ounces castor oil
11.2 ounces olive oil

Colorant

2 teaspoons Sea Clay mixed with 1½ tablespoons distilled water
2 teaspoons Green Zeolite Clay mixed with 1 tablespoon water
2 teaspoons Yellow Silt Clay mixed with 1½ tablespoons water
1½ teaspoons Rose Clay mixed with 1 tablespoon water
2 teaspoons Kaolin Clay mixed with 1 tablespoon water

Fragrance

2 ounces essential oil blend made of:

- 2 parts (1.0 ounce) Lavender essential oil
- 1 part (0.5 ounces) Sweet Fennel essential oil
- 1 part (0.5 ounces) Patchouli essential oil)

Equipment

- Standard equipment (see list on page 21)
- Mini-mixer (optional)
- Silicone loaf mold
- 5 large spoons for plopping
- 1 spoon for peaking

Prepare the clay. Mix each clay colorant in the proportions given, using a small whisk or mini-mixer. Whisk again right before adding to the soap batter. Clays must be prepared fresh for every recipe.

Make the Soap Mixture

1 **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.

2 **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the castor and olive oils.

3 **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, 1 to 2 minutes.

4 **Add the essential oil blend** to the soap batter and mix in with a whisk, taking care not to accelerate trace.

5 **Split the batch** into 5 equal parts, each measuring 1¼ cups.

6 **Color each soap batch** with one of the clay-and-water slurries. Blend the mixture into the soap with a whisk; you can use the same whisk for each batch if you add the colors from light to dark.

Plop Your Soap!

7 **Decide on a color order** and line the containers up accordingly, putting a different spoon in each container. When each of the soap batches has reached a very thick trace (this should happen quickly after the addition of the clays), spoon the soap into the mold one color at a time, layering them into three different spots within the mold.

Use some large plops, some medium ones, and some small ones; the varying amounts will add visual interest. Every so often, pause to tamp the mold on the work surface to flatten out the piles in the mold and remove any air bubbles. Continue through the color rotation in each of the three spots until all of the soap is in the mold.

Clay Spoon-Plop

8 **Using the back of a clean spoon,** push the soap on top toward the center of the mold to create a center peak (8a). The more passes with the spoon you make, the more texture will be added. However, the more passes, the more the soap will begin to blend and lose color variation. Experiment to find the perfect balance between texture and blending for your soap peak (8b).

Final Steps

9 **To help decrease soda ash formation,** spray the entire surface with 91% isopropyl rubbing alcohol two or three times over a 90-minute period, then cover the mold with either plastic wrap or a lid fashioned out of cardboard.

TIP: If the soap has peaked over the top of the mold, fold the cardboard in half and create a tent by draping an old towel over it.

10 **Insulate the entire mold** by wrapping it in a large towel and set it aside for at least 24 hours at room temperature before unmolding. Unmold within 3 to 4 days.

11 **Cut the soap** into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Psychedelic Green Tea

The benefits of drinking green tea have been touted for years: protection from cancer, relief of rheumatoid arthritis, decrease of cholesterol levels, improvement in cardiovascular disease, and more. These benefits come primarily from green tea's naturally occurring antioxidants, which work to stabilize free radicals. Additionally, green tea has natural antibacterial properties that are particularly beneficial in soap.

The brewed green tea used in place of water in this recipe turns a brownish hue when it reacts with the lye. This color will affect the final color of the soap. The Titanium Dioxide can help lighten the color somewhat, but a pure white soap is difficult to achieve when using liquid tea as an ingredient. Keep this in mind when choosing colors.

Note that we still refer to the lye-liquid combination as lye-water, even though the recipe substitutes green tea for water.

Approximately 9 bars

Lye-Water Amounts

- 6.1 ounces sodium hydroxide (lye)
- 14.5 ounces freshly brewed and cooled green tea (any variety)

Base Ingredient Amounts

- 8.8 ounces palm oil
- 8.8 ounces coconut oil (76°F)
- 2.2 ounces palm kernel flakes
- 4.4 ounces rice bran oil
- 8.8 ounces olive oil
- 11.0 ounces canola oil

Colorants

- 4 teaspoons Titanium Dioxide
- 1 teaspoon Hydrated Chrome Green Oxide
- 2 teaspoons Green Chrome Oxide
- 1 teaspoon Yellow Oxide
- 8 tablespoons sunflower oil (or other liquid oil)
- 1 teaspoon Copper Sparkle Mica
- 0.32 ounce green tea extract (optional)

Fragrance

- 3.0 ounces Green Tea fragrance oil

Equipment

- Standard equipment (see list on page 21)
- Mini-mixer
- 9-bar birch-wood mold

Prepare the colorant. Prior to starting the soapmaking process, mix the colorants as follows, using the mini-mixer.

- Titanium Dioxide in 4 tablespoons of the sunflower oil
- Hydrated Chrome Green Oxide in 1 tablespoon of oil
- Green Chrome Oxide in 2 tablespoons of oil
- Yellow Oxide in 1 tablespoon of oil

Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin or you'll stir up a messy cloud of pigment. Mix the colorants thoroughly for the most even color results.

Make the Soap Mixture

1 **Slowly and carefully** add the lye to the brewed green tea (never the other way around). Add the lye a small bit at a time, and stir after each addition until the lye is fully dissolved. This reduces the risk of the lye bubbling over as it reacts with the tea. Set aside to cool.

2 **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Melt and add the palm kernel flakes. Add the rice bran, olive, and canola oils.

3 **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Pulse the mixture with the stick blender until just combined. If you are adding the optional green tea extract, do so now. Add 4 tablespoons of the Titanium Dioxide mixture, and continue blending until light trace (the consistency of a melted milkshake) is achieved, about 2 minutes.

The tea turns a darker brown color when it is mixed with the lye.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

4 **Split the batch** into four equal parts, about 2 cups each. Keeping one batch aside, color the remaining three batches as follows:

- 1 tablespoon of Hydrated Chrome Green Oxide mixture
- 2 tablespoons of Chrome Green Oxide mixture + Copper Sparkle Mica
- 1 tablespoon of Yellow Oxide mixture

When mixing in the colorants, use a whisk or spoon to discourage trace from accelerating.

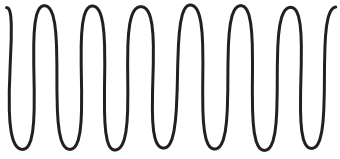
5 **Mix well** 0.75 ounce of the Green Tea fragrance oil into each of the four batches, continuing to use a whisk or spoon to incorporate.

Pour and Swirl

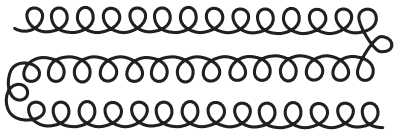
6 **Using one of the darker colors,** pour a small amount of soap into the mold in an S-curve across the length of the mold. With a small amount of one of the lighter colors, repeat the curve while trying to cover the bottom of the mold with soap.

7 **Pour a small amount** of the second light color directly in the middle of the curve created by the dark color. Pour a small amount of the second dark color directly in the middle of the curve created by the first light color. Continue this pattern, alternating which light color gets poured into which dark color and vice versa, until the mold is full of soap.

8 **With the mold sitting lengthwise,** insert a swirl tool (such as a chopstick or spatula) into the top left corner of the mold, pressing down until it touches the bottom of the mold. Drag the tool perpendicular to the stripes created by the soap, making S-curves until you reach the other edge of the mold.



9 **Remove the swirl tool** and clean off any excess soap. Starting in the same corner as the first swirl, insert the tool all the way into the soap until it touches the base of the mold. Swirl the soap in a looping pattern, perpendicular to the first set of swirls. When you reach the edge of the mold, create one big loop that carries you into the next row, and do a reverse loop back. Continue this pattern until all of the soap is swirled.



10 **Slowly and carefully** insert the plastic dividers into the soap.

Final Steps

11 **To help decrease soda ash formation,** spray the entire surface with 91% isopropyl rubbing alcohol two or three times over a 90-minute period, then cover the mold with either plastic wrap or a lid fashioned out of cardboard.

12 **Do not insulate the mold.** Preventing gel phase preserves the extracts and antioxidants and helps give a more even, creamy color. Unmold within 3 to 4 days.

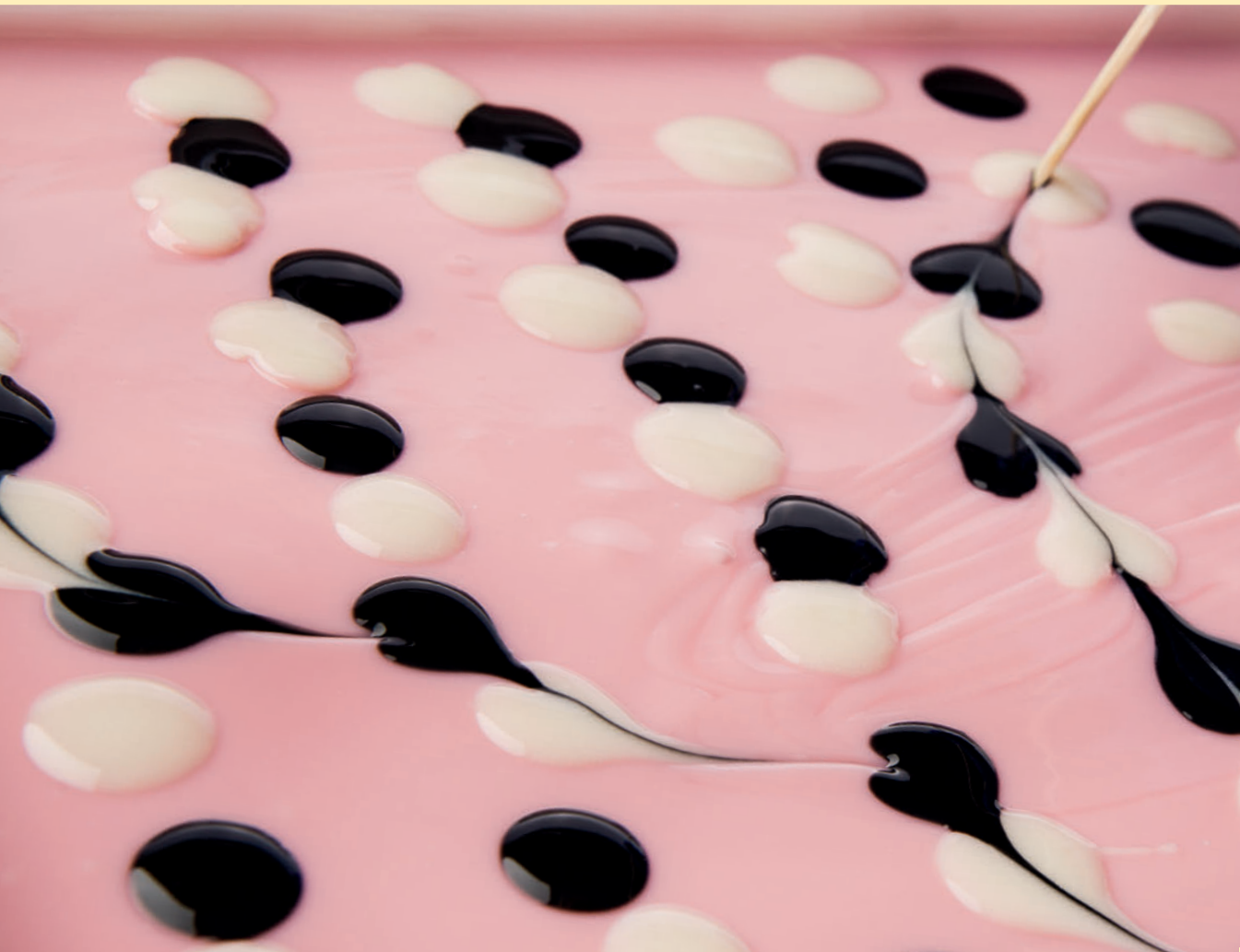
13 **Pull dividers out gently** with needle nose pliers or push soap out from bottom. Do not pull dividers off of molds directly as the soap can tear. Allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

CHAPTER 11

Super Swirls

Swirling techniques build on color theory to take your soap design to the next level. A swirl can include anything from a simple linear pattern to more elaborate and creative methods. Swirling creates movement, visual interest, and a polished finish for individual bars.

This technique is even a bit addicting! You may find that after exploring this chapter, you can't help but think about how to incorporate more and more swirls into your soap designs. You'll quickly discover that a swirl can be created without much effort; sometimes, bleeding colors will do the work for you and create a wonderfully watercolor-inspired design. Swirling is all about blurring the lines, so take that to heart when designing your soap.



Neon Swirl

Certain design elements in your soaps will work best if you use a nonbleeding or nonmigrating colorant, such as an oxide or a pigment. In this recipe, three neon colorants are used to obtain crisp, clean lines.

Because you need extra time with this recipe, choose a fragrance that is not known to accelerate trace. A bright, fresh fragrance oil will complement this color scheme perfectly.

A "pouring buddy" — an extra set of hands — is necessary for this recipe as you have to pour all three colors at once.

Approximately 8 bars

Lye-Water Amounts

- 3.0 ounces sodium hydroxide (lye)
- 7.2 ounces distilled water

Base Ingredient Amounts

- 5.5 ounces palm oil
- 5.0 ounces coconut oil (76°F)
- 1.1 ounces shea butter (refined)
- 1.5 ounces sweet almond oil
- 8.8 ounces olive oil

Colorants

- 1 teaspoon Fizzy Lemonade
- 1 teaspoon Tangerine Wow!
- 1 teaspoon Electric Bubble Gum
- 3 tablespoons sweet almond oil (or other liquid oil)

Fragrance

- 1.8 ounces Energy fragrance oil (or any other fragrance oil that will give a nice long trace)

Equipment

- Standard equipment (see list on page 21)
- Mini-mixer or latte frother
- 2-pound square or rectangular mold
- Cardboard or paperboard dividers
- Scotch or masking tape
- Funnel
- Swirl tool (see box on page 182)

Swirl Tool

This fun swirl tool adds depth of design to the soap. Carefully snap a narrow wooden dowel (¼-inch or smaller) in 3 places without breaking it into separate pieces. The longest part should fit lengthwise across the mold; the two shorter pieces act as handles to pull the tool through the soap, so leave a few threads of wood intact.

Put the dowel pieces in the mold before pouring the soap. (If you try to put the dowel pieces in after the pour, you'll get drag marks in the soap.)

To make a finer design, you can replace the dowel with a wire hanger bent into the appropriate size for your mold.

Prepare the colorant. Prior to starting the soapmaking process, mix each color in 1 tablespoon of sweet almond oil, using the mini-mixer. Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin, or you'll stir up a messy cloud of pigment. Mix the colorants thoroughly for the most even color results.

Prepare the mold. Line the mold with a liner or freezer paper, shiny side up. Out of thin cardboard or paperboard, cut two pieces that fit snugly into the mold lengthwise and are about 1 inch higher than the top of the mold. Also out of the cardboard or paperboard, cut two 1-inch × 2-inch pieces; attach these pieces to the top of each of the lengthwise pieces so that you have a T shape (see photo below). Set the cutouts into the mold, and tape the top tabs of the T's to the side of the mold. Insert the swirl tool.

Note: If this feels like a lot of prep work, this design works fine with one divider and two colors.

TIP: To get a super-snug fit between the cardboard divider and the mold — and thus to ensure crisp, even lines in your soap — drizzle a thin line of melt-and-pour soap base (see page 12) on the bottom of the mold as a temporary sealant.

Make the Soap Mixture

1. **Add the lye to the water** (never the other way around), stir gently, and set aside until clear.
2. **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the shea butter to the warm oils. Once the shea butter is melted, add the almond oil and the olive oil.

3 **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, 1 to 2 minutes.

4 **Add the Energy fragrance oil** (or other oil). Switch to a whisk for mixing so that the soap doesn't trace too quickly.

TIP: When you know how a fragrance oil will react in soap, you can add it directly to the base oils rather than at thin trace. This is suggested only for fragrances that perform perfectly in cold-process soap.

5 **Divide the batch** equally into three separate containers. Each part should weigh about 10.5 ounces, but it is okay to eyeball the measurement.

6 **Add the colorants** as follows, one color per batch:

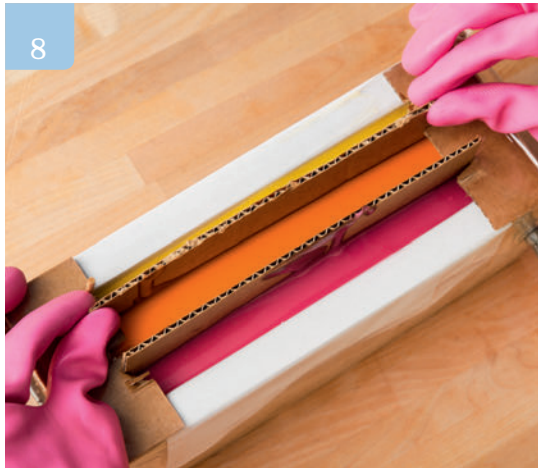
- ¾ tablespoon of Fizzy Lemonade
- 1 tablespoon of Tangerine Wow!
- ½ tablespoon Electric Bubble Gum

Use a whisk or spoon to mix in the colorants. You can use separate utensils for each color or mix from lightest to darkest (Fizzy Lemonade to Tangerine Wow! to Electric Bubble Gum).

Pour and Swirl

7 **Time to call in your "pouring buddy"!** For the dividers to work, the three batches of soap need to be poured at the same time, so you'll need that extra pair of hands. Your buddy will pour one of the batches and also hold the funnel steady. Use the funnel for the middle color.

8

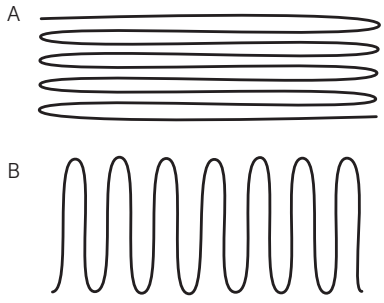


10

8 **Slowly remove** the cardboard dividers from the soap; they should pull out easily, because the warm soap melts the sealant.

9 **Remove the swirl tool** in any fashion you'd like to create an interesting swirl; one way is to pull it a little vertically, then drag it across the soap horizontally, then a little bit vertically, then back across the soap, over and over again until you reach the top of the mold. The more you go back and forth, the busier and more aggressive the pattern will be.

10 **Swirl just the top layer of the soap** by dragging a knife or chopstick parallel to the soap lines, taking care not to go more than about ¼ inch into the soap. Create S-curves all the way down the top of the soap (A). Repeat the S-curves widthwise (B).



Final Steps

11 **Spray with** 91% isopropyl rubbing alcohol two or three times over a 90-minute period, then cover with either plastic wrap or a lid fashioned out of cardboard.

12 **Insulate the entire mold** by wrapping it in a large towel and set it aside for 2 or 3 days at room temperature before unmolding. Unmold as soon as the soap is hard enough to pull out.

TIP: If using freezer paper, pull the soap out with the paper lining rather than prying at the soap.

13 **Cut the soap** into bars, and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Linear Swirl with Oxides

The nature-identical mineral colorants known as oxides are a wonderful option for cold-process soap. Overall, oxides tend to perform well and will produce bold, vibrant colors. However, oxides tend to clump and need to be dispersed in a carrier oil before being added to soap batter; otherwise the batter may reach a thick trace before the oxides are fully incorporated.

This recipe uses brightly contrasting colors to create an eye-popping swirl. When designing a swirl, look at a color wheel and choose colors directly opposite each other for the most dramatic effect.

Approximately 9 bars

Lye-Water Amounts

- 6.0 ounces sodium hydroxide (lye)
- 14.4 ounces distilled water

Base Ingredient Amounts

- 6.5 ounces palm oil
- 8.7 ounces coconut oil (76°F)
- 2.2 ounces cocoa butter
- 2.2 ounces mango butter
- 2.2 ounces hemp seed oil (refined)
- 21.8 ounces olive oil

Colorants

- 1 teaspoon Titanium Dioxide
- 1 teaspoon Yellow Oxide
- 2 teaspoons Ultramarine Violet Oxide
- 1 teaspoon Black Oxide
- 4 tablespoons sweet almond oil (or other liquid oil)

Fragrance

- 2.6 ounces White Tea and Ginger fragrance oil

Equipment

- Standard equipment (see list on page 21)
- Mini-mixer
- 9-bar birch-wood mold

Prepare the colorants. Prior to starting the soapmaking process, mix each color in 1 tablespoon of sweet almond oil, using the mini-mixer. Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin, or you'll stir up a messy cloud of pigment. Mix the colorants thoroughly for the most even color results.

Make the Soap Mixture

1. **Add the lye** to the water (never the other way around), stir carefully, and set aside until clear.
2. **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Measure and melt the cocoa butter and add it to the bowl. Cut the mango butter into chunks and add it to the warm oils, stirring until it melts. Add the hemp seed and olive oils.
3. **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, about 2 minutes.
4. **Add the White Tea and Ginger** fragrance oil. Switch to a whisk for mixing so that the soap doesn't trace too quickly.

TIP: When you know how a fragrance oil will react in soap, you can add it directly to the base oils rather than at thin trace. This is suggested only for fragrances that perform perfectly in cold-process soap.

5. **Split the batch** into four parts for swirls. Weigh out 22.4-ounces (40 percent of the total batch) for the base color, and three parts at 11.2 ounces (20 percent of the total batch each). It's okay if you don't measure these out exactly. The main thing is to use almost half of the recipe for the base color.
6. **Add the colorants** as follows:
   - 1 tablespoon of the Titanium Dioxide mixture to the 22.4-ounce batch
   - ½ teaspoon of the Yellow Oxide mixture to one of the smaller batches
   - All of the Ultramarine Violet Oxide mixture to another small batch
   - ¼ teaspoon of the Black Oxide mixture to the last small batch

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

Use a whisk or spoon to mix each of the colorants into the soap without accelerating trace. You will end up with a little extra colorant, which you can keep for another project or wash down the sink (see Ceramic Sinks: A Cleanup Caution, page 44).

Pour and Swirl

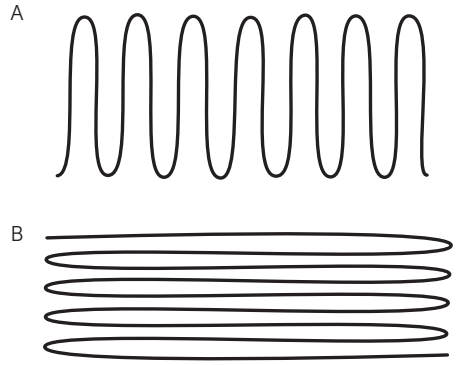
7 **Splash 1 to 2 ounces** each of the Yellow Oxide, Ultramarine Violet Oxide, and Black Oxide colored soap batter on the bottom of the mold in any design to add a dash of color to the bottom of each bar. Pour half of the white soap batter over these spots.

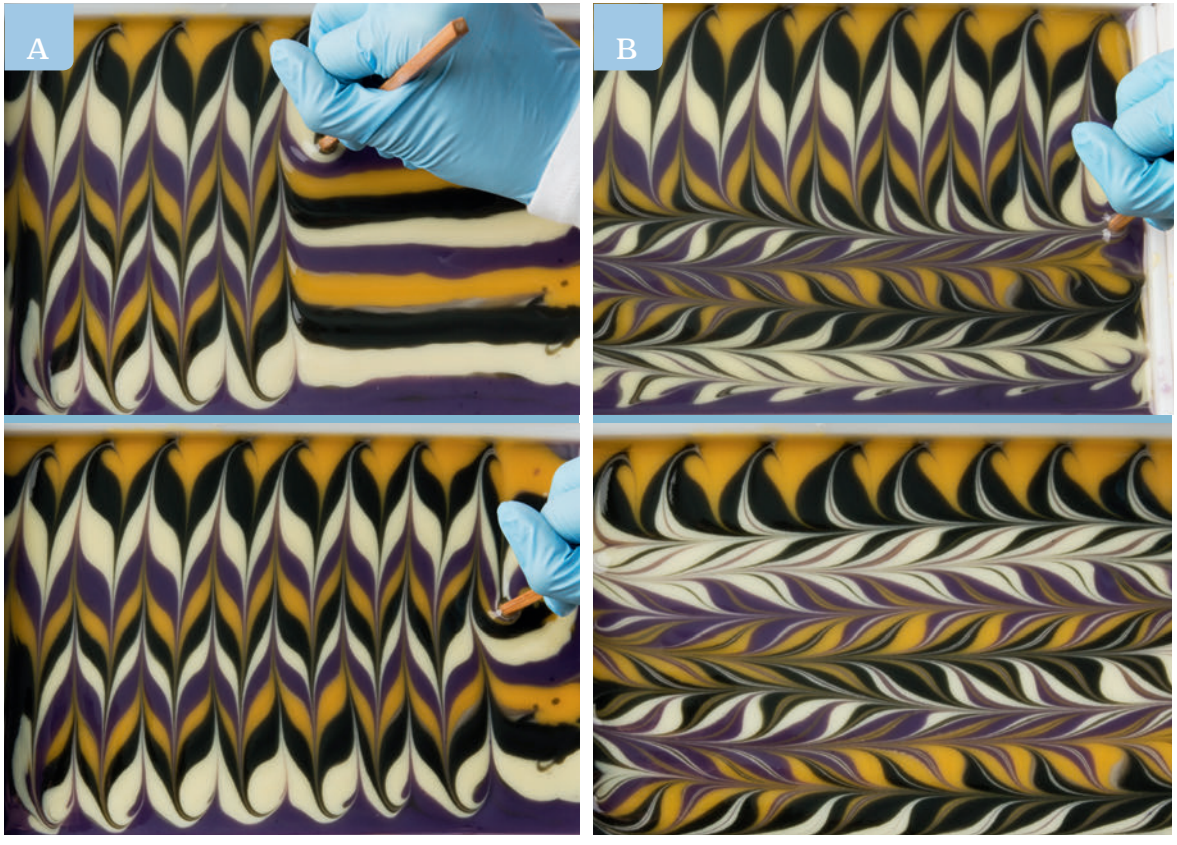
8 **Line up the colored batches** in the order you want to add them to the base soap. Pour the first color in long S-curves lengthwise across the soap, taking care to keep the tip of the pour close to the surface of the soap so that the color does not sink into the white soap (8a). With the next color, create another long S-curve that follows but does not overlap the first color. Repeat with the third color (8b).

9 **Now repeat with all of the colors,** including the white, pouring directly over the first line of the same color until all of the containers are empty. You will have several pours of each color, depending the thickness of the lines and the trace of the batter.

Linear Swirl with Oxides

10 **With a swirl tool** (such as a skewer or chopstick), drag vertically across the lines of soap you just poured (A). Remove the swirl tool from the soap, scoot over about a ½ inch from where you just pulled out the tool (but still against the wall of the mold), and drag the swirl tool in the opposite direction, back to where you started the swirl (B). Repeat this until you have gone across the entire surface of the soap.





11 **Slowly and carefully** insert plastic soap dividers, which will drag the design down the side of the bars. Leave the dividers in until you are ready to unmold the soap.

OPTIONAL: If you don't care for the drag marks on the side of your bars, you can leave the dividers out and just cut the soap once it has set up.

Final Steps

12 **Spray with** 91% isopropyl rubbing alcohol two or three times over a 90-minute period to help decrease soda ash.

13 **Cover the mold** with the lid that comes with the mold. Insulate the entire mold by wrapping it in a large towel and set it aside for at least 24 hours at room temperature before unmolding. Unmold within 3 or 4 days by pulling the dividers out with needle nose pliers or turning the mold over and pushing the soap out. Do not pull the dividers away from the soap as this may tear the surface.

14 **Allow to cure** in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

12-Color Linear Swirl

Soap designs don't have to be limited to one or two colors. For the particularly ambitious, this recipe includes 12 different colors to create a gorgeous swirl. When working with this many colors, you have to keep a couple of things in mind.

First, to keep lines and swirls crisp and clean, only use colorants that won't bleed into each other. This recipe uses a variety of colorants to make sure that none of the colors will bleed.

Second, to ensure that there is enough time to mix and pour all of the different colors, choose a tried-and-true fragrance oil. Your supplier should be able to answer any questions about fragrance oils' performance in cold-process soapmaking.

Approximately 18 bars

Lye-Water Amounts

10.5 ounces sodium hydroxide (lye)
24.8 ounces distilled water

Base Ingredient Amounts

18.8 ounces palm oil
18.8 ounces coconut oil (76°F)
2.3 ounces castor oil
5.3 ounces avocado oil
15.0 ounces olive oil
15.0 ounces rice bran oil

Colorants

Paprika infusion (2 teaspoons paprika + 5 tablespoons sunflower oil; see page 194)
1 teaspoon Green Chrome Oxide
1 teaspoon Cellini Blue Mica
1 teaspoon Ultraviolet Blue
1 teaspoon Electric Bubble Gum
1 teaspoon Black Oxide
1 teaspoon Titanium Dioxide
1 teaspoon Cellini Yellow Mica
2 teaspoons Ultramarine Violet Oxide
2 teaspoons Tangerine Wow!
2 teaspoons Fizzy Lemonade
13 tablespoons sunflower oil (or other liquid oil)
½ teaspoon Sparkle Gold Mica

Fragrances

5.2 ounces Yuzu fragrance oil

Equipment

- Standard equipment (see list on page 21)
- Heat-sealable tea bag
- Mason jar
- Double boiler, crockpot, or heavy-bottom pan
- Mini-mixer
- 12 small containers (about 18 ounces each) for mixing colorants into batches
- 18-bar birch-wood mold

Prepare the mold by lining it with freezer paper, shiny side up, or using a mold liner.

Prepare the paprika infusion. Measure 2 tablespoons of paprika into a heat-sealable tea bag, and follow the manufacturer's instructions for sealing the bag. Pour 5 ounces of sunflower oil in a mason jar, and set the tea bag into the oil. Seal the mason jar and let sit in a double boiler, crock pot, or heavy-bottom pan (filled with enough water to reach almost the top of the mason jar) on a low setting for approximately 2 hours. Allow to cool before using in soap.

Prepare the colorant. Prior to starting the soapmaking process, mix each color (except the Sparkle Gold Mica) in 1 tablespoon of sunflower oil, using the mini-mixer. Mix the Tangerine Wow!, Fizzy Lemonade, and Violet Oxide in 2 tablespoons of sunflower oil rather than 1. Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin, or you'll stir up a messy cloud of pigment. Mix each colorant thoroughly for the most even color results.

Make the Soap Mixture

1. **Add the lye to the water** (never the other way around), stir gently, and set aside until clear.
2. **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the castor, avocado, olive, and rice bran oils. Add the Yuzu fragrance oil to the base oils.

TIP: When you know how a fragrance oil will react in soap, you can add it directly to the base oils rather than at thin trace. This is suggested only for fragrances that perform perfectly in cold-process soap.

3. **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, about 2 minutes.
4. **Split the batch** into 12 containers. Each batch should weigh about 9 ounces.

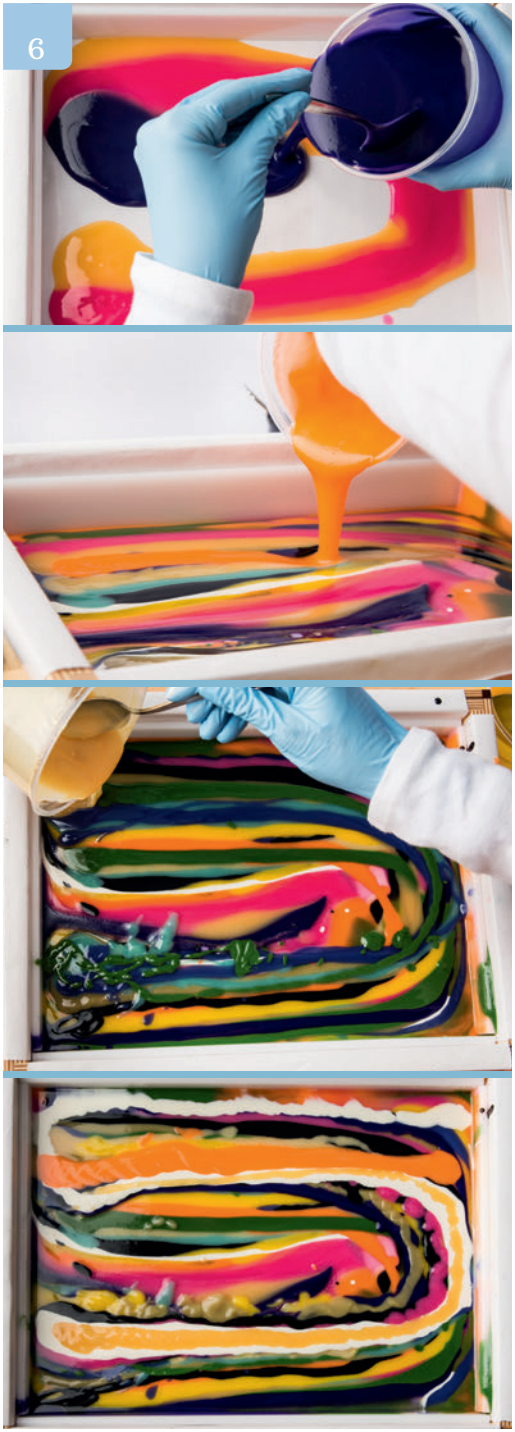
SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

5 **Using a whisk or spoon,** add the following colorants (1 color per container):

- ½ tablespoon Green Chrome Oxide mixture
- ½ teaspoon Cellini Blue Mica mixture
- 2 tablespoons Tangerine Wow! mixture
- 1½ tablespoons Fizzy Lemonade mixture
- 1 teaspoon Ultraviolet Blue mixture
- 1 tablespoon Electric Bubble Gum mixture
- 2 tablespoons Ultramarine Violet Oxide mixture
- ½ teaspoon Sparkle Gold Mica
- 1 teaspoon Black Oxide mixture
- 1 tablespoon Titanium Dioxide mixture
- 1 tablespoon Paprika infusion
- 1 tablespoon Cellini Yellow Mica mixture + ¼ teaspoon Ultraviolet Blue mixture

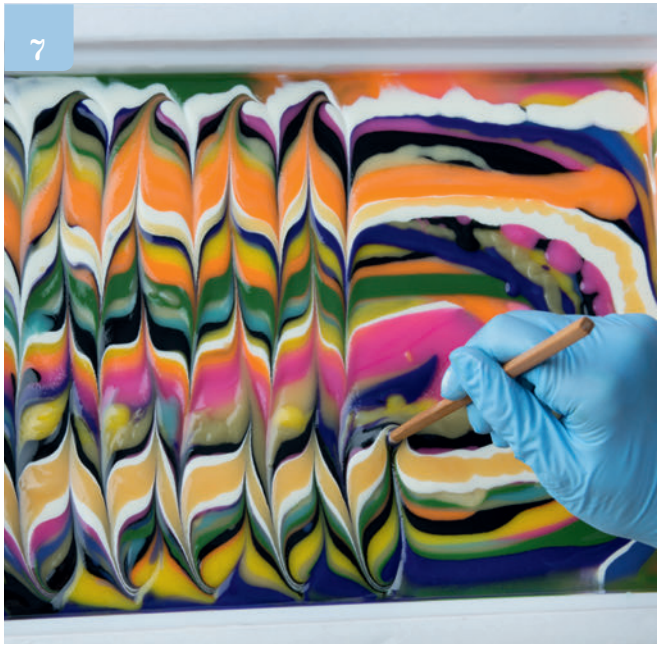
Use a whisk to stir any soap that appears grainy during the pouring process.

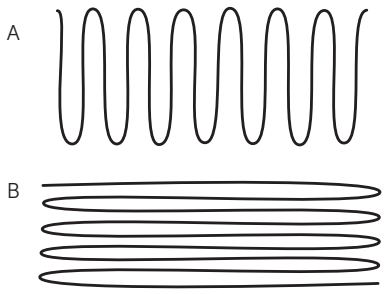


Pour and Swirl

6 **Pour a line of colored soap** lengthwise into the mold, making straight lines or pouring in a U-shape (there are no wrong answers here!). Pour another line from a different colored soap in a different spot in the mold, still going lengthwise. Continue pouring lines of soap lengthwise down the mold, alternating colors, until the mold is full. You may want to differentiate the colors more clearly as you reach the halfway point of the mold, to make a more distinctive pattern when you swirl them.

7 **Tamp the mold** on the work surface to remove any air bubbles. With a swirl tool (such as a skewer or chopstick), start on the short side of the mold and drag the tool from corner to corner so that it crosses the lines created by the soap perpendicularly. Go up and down in an S-curve for the length of the mold (A).





8 **Wipe excess soap off of the swirl tool.** Starting in the corner of the long side of the mold, drag the swirl tool so that it intercepts the first swirl created perpendicularly. Go up and down in an S-curve for the length of the mold (B).

9 **Slowly insert the dividers** into the soap so that the dividers reach the bottom of the mold in every section. This drags the design down the sides of the bars.

Final Steps

10 **To help decrease soda ash formation,** spray the entire surface with 91% isopropyl rubbing alcohol two or three times over a 90-minute period, then cover the mold with either plastic wrap or a lid fashioned out of cardboard.

11 **Insulate the entire mold** by wrapping it in a large towel and set it aside for at least 24 hours at room temperature before unmolding. Unmold within 3 to 4 days by pulling the dividers out with needle nose pliers or turning the mold over and pushing the bars out. Do not pull the dividers. They may tear the surface of the soap.

12 **Allow to cure** in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Tie-Dye Soap

This technique produces a fun tie-dye appearance with bright, contrasting colors that pop in the final design. Castor oil adds to the lathering ability of the bar, while the dream team of palm, coconut, and canola oils come together to create a great balance between texture and hardness. A slow-moving recipe and fragrance oil are key to this technique.

Approximately 20 bars

Lye-Water Amounts

8.3 ounces sodium hydroxide (lye)
19.1 ounces distilled water

Base Ingredient Amounts

19.1 ounces palm oil
18.0 ounces coconut oil (76°F)
1.2 ounces castor oil
19.7 ounces canola oil

Colorants

12 mL diluted Tropical Pink LabColor
12 mL diluted Canary LabColor
15 mL diluted Tangerine LabColor
18 mL diluted Blue Mix LabColor
15 mL diluted Royal Blue LabColor
(See Working with LabColors, page 44.)

Fragrance

4.0 ounces Black Cherry Fragrance Oil

Equipment

- Standard equipment (see list on page 21)
- 5-pound wood log mold

Prepare the mold. Insert the liners that come with the mold. If you are an extra clean soaper, you can line the mold with freezer paper (shiny side out) prior to putting the liners in place.

Make the Soap Mixture

1. **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.
2. **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the castor and canola oils.
3. **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, 1 to 2 minutes.
4. **Split the soap** into 5 batches, about 2 cups each.
5. **Color each batch** with one of the diluted LabColors. Use a whisk or spoon to mix in the colors so as not to accelerate trace too much.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

6 **Add 0.8 ounce** of the Black Cherry fragrance oil to each of the colored batches. Continue to use a whisk or spoon to mix in the fragrance oil.

Pour and Swirl

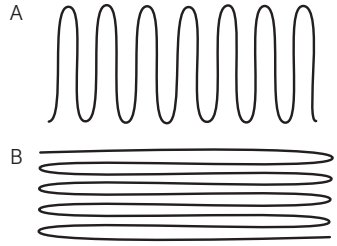
7 **For the first round,** pour each colored batch in a straight line down the length of the mold, in an order that produces the most visual interest and contrast.

8 **Staying as close as possible** to the original pouring order, switch from a straight line to a U-shape in the pouring style. Starting at one end of the mold, go down the length of the mold, curve the pour around, and come back up. For subsequent pours, try to layer the same colors on top of each other. Pour close to the surface to reduce soap breakthrough.

TIP: The middle layers are less likely to show any mistakes in pouring. Use these layers to practice as you work toward perfection in the topmost layer.

9 **With the mold sitting lengthwise,** insert a swirl tool (such as a chopstick or spatula) into the top left corner of the soap in the mold, pressing until the swirl tool is submerged about 1 inch. Drag the tool perpendicular to the stripes created by the soap, making S-curves until you reach the other edge of the mold (A). Remove the swirl tool and clean off any excess soap.

10 **Insert the swirl tool** back into the soap at the top left corner, but this time drag the tool along the length of the mold, perpendicular to the first round of draglines (B). Make S-curves until you reach the other end of the mold.



Final Steps

11 **Spray with** 91% isopropyl rubbing alcohol two or three times over a 90-minute period to help decrease soda ash.

12 **Insulate the entire mold** by wrapping it in a large towel and set it aside for at least 24 hours at room temperature before unmolding. Note: These colors get brighter when they go through a hot gel phase, so if you have a heating pad, turn it on low and place the insulated soap on top of it for 30 minutes before leaving it to set up. Unmold within 3 to 4 days.

13 **Cut the soap** into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Painted Hearts

The swirling technique presented in this recipe creates a whimsical design that adds a loving touch to bars of soap. The apricot kernel oil adds moisturizing qualities that benefit a wide variety of skin types, while the coconut and palm oils work together to create a great balance between texture and lather.

Approximately 18 bars

Lye-Water Amounts

11.5 ounces sodium hydroxide (lye)
26.4 ounces distilled water

Base Ingredient Amounts

16.0 ounces palm oil
20.0 ounces coconut oil
8.0 ounces palm kernel flakes
8.0 ounces canola oil
12.0 ounces olive oil
16.0 ounces apricot kernel oil

Colorants

1 teaspoon Ultramarine Pink Oxide
½ teaspoon Black Oxide
1½ tablespoons diluted Fuchsia LabColor
1 teaspoon Super Pearly White Mica
2½ tablespoons sunflower oil (or other liquid oil)

(See Working with LabColors, page 44.)

Fragrance

5.3 ounces Rosehip Jasmine fragrance oil

Equipment

- Standard equipment (see list on page 21)
- 18-bar birch-wood mold
- Mini-mixer
- Two 14-ounce condiment bottles

Prepare the mold by lining it with freezer paper, shiny side up, or using a mold liner.

Prepare the colorant. Prior to starting the soapmaking process, mix the Ultramarine Pink Oxide in 1 tablespoon of the sunflower oil, and the Black Oxide in ½ tablespoon of the sunflower oil. Mix the Super Pearly White Mica with 1 tablespoon sunflower oil. Using the mini-mixer, push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin or you'll stir up a messy cloud of pigment. Mix the colorants thoroughly for the most even color results.

Pour all of the dispersed Black Oxide into one of the condiment squirt bottles, and the Super Pearly White Mica into the other. Set the Ultramarine Pink Oxide aside.

Make the Soap Mixture

1 **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.

2 **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Melt and add the palm kernel flakes. Then add the canola, olive, and apricot kernel oils.

3 **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, about 2 minutes.

4 **Pour about 4 ounces** of soap batter into each condiment bottle. (The bottles should each be about half full.)

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

5 **Cover the tip of the bottle** with a gloved finger and shake to mix the color. (Point the tip of the bottle away when removing your finger, as fresh soap may spurt out.) Set the bottles aside.

6 **Color the remaining soap** with the Ultramarine Pink Oxide mixture and the Fuchsia LabColor. Use a whisk to mix in the color.

7 **Add the Rosehip Jasmine** fragrance oil, and mix in quickly with a whisk. If it's grainy, give it a quick stick-blend.

Pour and Swirl

8 **Pour the base soap into the mold.** Tamp the mold on the work surface to remove any air bubbles.

9 **Dot the black and white soap** over the entire surface of the pink soap. Make ½-inch-diameter dots spaced ½ inch or so apart, as shown.

10 **With a swirl tool** (such as a skewer or chopstick), lightly drag through the squirted soap in a connect-the-dots pattern without lifting the tool. Be sure that the swirl tool is only touching the top of the soap; the swirl should affect only the black and white dots, not the fuchsia soap underneath, and should result in a pattern of hearts. Continue until all of the dots have been swirled and connected.

OPTIONAL: Add the dividers to the soap. This will drag the white and black colors down the side of the bar. The look you go for is a personal preference.

Final Steps

11 **To help decrease soda ash formation,** spray the entire surface with 91% isopropyl rubbing alcohol two or three times over a 90-minute period, then cover the mold with either plastic wrap or a lid fashioned out of cardboard.

12 **Insulate the entire mold** by wrapping it in a large towel and set it aside for at least 24 hours at room temperature before unmolding. The color in this soap will be brighter and bolder if the soap goes through gel phase. Unmold within 4 days.

13 **If you didn't use the dividers,** cut the soap into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Mantra Swirl

The gorgeous swirling technique in this recipe lends itself to a number of color combinations and cutting-edge styles. A simple two-color scheme is dressed up with a third color on top to show off the figure-eight design.

Approximately 20 bars

Lye-Water Amounts

8.3 ounces sodium hydroxide (lye)
19.8 ounces distilled water

Base Ingredient Amounts

12.0 ounces palm oil
12.0 ounces coconut oil (76°F)
3.0 ounces palm kernel flakes
1.8 shea butter (refined)
4.2 ounces rice bran oil
12.0 ounces olive oil
15.0 ounces canola oil

Colorants

½ teaspoon Titanium Dioxide
½ tablespoon sunflower oil (or other liquid oil)
21 mL diluted Tangerine LabColor
½ teaspoon Super Pearly White Mica
½ teaspoon activated charcoal

(See Working with LabColors, page 44.)

Fragrance

3.3 ounces Rise and Shine fragrance oil

Equipment

- Standard equipment (see list on page 21)
- Mini-mixer
- 5-pound wood log mold with cardboard divider (see step 8, page 213)
- 14-ounce squirt bottle (snip the tip of the spout to widen it approximately 25 percent)

Prepare the colorant. Prior to starting the soapmaking process, mix the Titanium Dioxide in the sunflower oil, using the mini-mixer. Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin or you'll stir up a messy cloud of pigment. Mix the colorant thoroughly for the most even color results.

Prepare the mold by lining it with freezer paper, shiny side up, or using a mold liner. Cut a cardboard divider that fits snugly down the center (lengthwise) of the mold. Cardboard brackets on either end help with stability.

Make the Soap Mixture

1. **Add the lye to the water** (never the other way around), stir gently, and set aside until clear.
2. **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Melt and add the palm kernel flakes. Once the oils are melted, stir in the shea butter, along with the rice bran, olive, and canola oils.
3. **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, 1 to 2 minutes.
4. **Pour 3 to 4 ounces** (by weight) of soap plus the Titanium Dioxide mixture into the squirt bottle. Place your finger over the tip of the bottle and shake to mix the colorant and the soap. Point the tip away from yourself when you remove your finger as there may be a bit of backsplash.

5. **Split the remaining soap** in half, each about 5 cups.
6. **Add the Tangerine LabColor** and 1.6 ounces of the Rise and Shine fragrance oil to one of the 5-cup batches. Stick-blend carefully so as not to accelerate trace.
7. **Add the Super Pearly White Mica,** the activated charcoal, and the remaining 1.7 ounces of Rise and Shine fragrance oil to the other 5-cup batch. Use a whisk to incorporate the color and fragrance so as not to accelerate trace.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

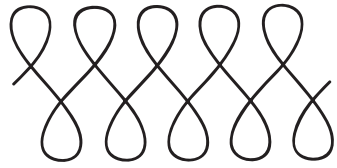
Pour and Swirl

8 **Pour the colored batches** at the same time, one into each of the cavities created by the divider.

9 **Slowly remove the divider** and tamp the mold on the work surface to remove any air bubbles.

10 **Give the squirt bottle one last shake** to ensure that the soap is pourable. Holding the nozzle close to the poured soap, squirt a line down the center of the mold, right where the orange and gray soaps meet. The more times you go back and forth, the thicker the white line will be. It's okay if you have soap left over. The key is to make the line as thick as you want for your design.

11 **In the upper right-hand corner** of the mold, insert a swirl tool (such as a dowel or chopstick) into the soap until you touch the bottom of the mold. Drag the tool in a figure-eight pattern, perpendicular to the white stripe down the middle, until you reach the other side.



Final Steps

12 **To help decrease soda ash formation,** spray the entire surface with 91% isopropyl rubbing alcohol two or three times over a 90-minute period, then cover the mold with either plastic wrap or a lid fashioned out of cardboard.

13 **Insulate the entire mold** by wrapping it in a large towel and set it aside for at least 24 hours at room temperature before unmolding. Unmold within 3 to 4 days.

14 **Cut the soap** into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Squirty Swirls

There are lots of fun tools available for creating unique and interesting designs in your soap. This recipe uses condiment squirt bottles to create a splashy, swirly two-color pattern.

Squirting the soap into the mold instead of pouring it can take up to 10 minutes, so it's important to use a tried-and-true recipe (like this one) and a fragrance oil that's guaranteed not to accelerate.

Approximately 12 bars

Lye-Water Amounts

5.9 ounces sodium hydroxide (lye)
13.9 ounces distilled water

Base Ingredient Amounts

11.3 ounces palm oil
11.3 coconut oil (76°F)
1.7 castor oil
17.6 ounces olive oil

Colorants

1½ teaspoons Ultramarine Blue Oxide
1½ teaspoons Titanium Dioxide
3 tablespoons sunflower oil (or other liquid oil)

Fragrance

2.6 ounces Sage and Lemongrass fragrance oil

Equipment

- Standard equipment (see list on page 21)
- Mini-mixer
- Four 14-ounce condiment bottles (snip the tips of the spouts to widen them approximately 25 percent)
- Silicone loaf mold

Prepare the colorant. Prior to starting the soapmaking process, mix the Ultramarine Blue Oxide in 1½ tablespoons of the sunflower oil and the Titanium Dioxide in 1½ tablespoons of the sunflower oil, using the mini-mixer. Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin or you'll stir up a messy cloud of pigment. Mix the colorants thoroughly for the most even color results.

Make the Soap Mixture

1. **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.
2. **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Add the castor and olive oils.
3. **When both the lye-water and oils** are below 120°F, add the lye-water to the oils, pouring it over a spatula or down the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, 1 to 2 minutes.
4. **Divide the batch** equally between two containers. Add the Ultramarine Blue Oxide mixture and 1.3 ounces of the Sage and Lemongrass fragrance oil to one batch, and the Titanium Dioxide mixture and the remaining fragrance oil into the other. Mix well, using a whisk so as not to accelerate trace.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

Squirt and Swirl

5 **Pour the soap** into the condiment bottles; each color will fit into two bottles. As you use each bottle, periodically put your gloved finger over the tip and give it a good shake to keep the color blended.

6 **Choose a starting color** and squirt the soap into the silicone loaf mold, making a tight zigzag pattern across the width of the mold. Make one pass, then switch to the next color, repeating the pattern in between the lines of the first color.


7


9

7 **Continue alternating colors** until the mold is full, turning the mold every so often so that one side isn't heavier than the other.

8 **Tamp the mold** on the work surface periodically to remove any air bubbles.

9 **If there's any soap left in the bottles,** shake it down to the nozzle and squeeze hard to splatter those last bits over the surface and create an artistic extra touch.

Final Steps

10 **To help decrease soda ash formation,** spray the entire surface with 91% isopropyl rubbing alcohol two or three times over a 90-minute period, then cover the mold with either plastic wrap or a lid fashioned out of cardboard.

11 **Insulate the entire mold** by wrapping it in a large towel and set it aside for at least 24 hours at room temperature before unmolding.

12 **Cut the soap** into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Fire-Drop Swirl

This gorgeous swirl looks a bit like drops of falling rain-fire. For this project, a slow-moving fragrance oil is key. Much in the same way that some micas can morph in cold-process soapmaking (see page 43), some fragrance oils can accelerate trace, limiting the time you'll have to mix the colors.

I've chosen a delicately spicy sandalwood scent for this soap, but you can use anything that will give you plenty of time to work, such as lavender or litsea essential oil. If you're not sure if a particular fragrance will work, ask your vendor or do a small test batch yourself.

Approximately 18 bars

Lye-Water Amounts

5.3 ounces sodium hydroxide (lye)
12.9 ounces distilled water

Base Ingredient Amounts

5.9 ounces palm oil
5.9 ounces coconut oil (76°F)
3.9 ounces avocado butter
3.9 ounces avocado oil
19.5 ounces olive oil

Colorants

1 teaspoon Super Pearly White
½ teaspoon Merlot Mica
½ teaspoon Luster Black Mica
½ teaspoon Sparkle Gold Mica
½ teaspoon Yellow Mica
5 teaspoons avocado oil (or other liquid oil)

Fragrance

2.6 ounces Sensuous Sandalwood fragrance oil

Equipment

- Standard equipment (see list on page 21)
- Mini-mixer
- 5 squirt bottles
- 9-bar birch-wood mold (or any wide, flat mold that is fully lined)

Prepare the colorant. Prior to starting the soapmaking process, mix ½ teaspoon of each colorant in 1 teaspoon of avocado oil, using the mini-mixer. (You'll have a ½ teaspoon of Super Pearly White left over.) Push the powder under the surface of the oil with the tip of the blade to saturate the powder before you begin, or you'll stir up a messy cloud of pigment. Mix the colorants thoroughly for the most even color results.

Make the Soap Mixture

1. **Add the lye** to the water (never the other way around), stir gently, and set aside until clear.
2. **Melt the palm oil** in its original container, mix it thoroughly, and measure into a bowl large enough to hold all the oils and the lye-water with room for mixing. Melt and measure the coconut oil and add it to the bowl. Cut the avocado butter into chunks and add to warm oils, stirring until it melts. Once the butter is melted, add the avocado and olive oils.
3. **When the oils and the lye-water** are both below 120°F, add the lye-water to the oils, pouring it over a spatula or the shaft of the stick blender to minimize air bubbles. Tap the stick blender a couple of times against the bottom of the bowl to release any air trapped in the blades. **Do not turn on the stick blender until it is fully immersed.** Stick-blend until light trace (the consistency of a melted milkshake) is achieved, about 2 minutes.
4. **Add the Sensuous Sandalwood** fragrance oil and remaining ½ teaspoon of Super Pearly White. Switch to a whisk for mixing if necessary so that the soap doesn't trace too quickly.

5. **Separate about 25 percent** of the batch and divide it into five squirt bottles. Each part will weigh about 3 ounces.
6. **Add one colorant mixture** to each bottle. Place your finger over the opening and gently shake the bottle to mix the colorant and the soap batter. Be careful when removing your finger and point the bottle away from your face; some of the soap might squirt a bit.

SOAP SAFELY!

- Work in a well-ventilated area. Do not breathe any fumes!
- Wear long sleeves, long pants, and closed-toe shoes.
- Don safety goggles (regular glasses are not sufficient protection) and rubber gloves during the entire soapmaking process.
- Keep children and pets away from your workspace.

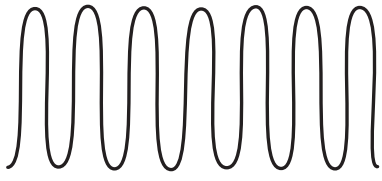
Pour and Swirl

7 **Pour the white soap base** (the remaining 75 percent of the total batch) into the mold.

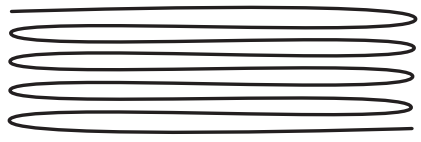
8 **Line up the squirt bottles** in the order that you want to add them to the soap. With the first color, squeeze S-curves lengthwise across the soap, taking care to keep the tip of your squirt bottle close to the surface. With the next color, create S-curves that follow but don't overlap the first color. Repeat with each color, following the original color line, until all five colors are right beside each other. Now repeat the process, pouring each color directly over the first line of the same color until the squirt bottles are empty.

9 **With a swirl tool,** drag a straight line across the width of the mold, perpendicular to the lines created by the soap. Curve the line from side to side without removing the swirl tool from the soap until you reach the end of the mold (A). Remove the swirl tool from the soap. Repeat the above step, except this time, drag the line with the chopstick horizontally across the soap, perpendicular to the swirl you just created. Swirl back and forth until you reach the end of the mold (B).

A



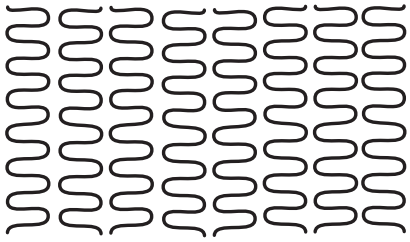
B



10 **Lift the swirl tool** and start at the top again with more S-curves, but this time with a backward S (C). You are creating superskinny sections and superwide sections because the two S-curves are meeting and separating at the same spots. Repeat this until you have gone across the entire surface of the soap.

TIP: Drag along the top of the mold a bit when starting an S-curve to carry the design all the way to the edge.

C



Final Steps

11 **Spray with** 91% isopropyl rubbing alcohol two or three times over a 90-minute period to help decrease soda ash.

12 **Cover the soap** with the lid of the mold or a piece of cardboard. Insulate the entire mold by wrapping it in a large towel and set it aside for at least 24 hours at room temperature before unmolding. Unmold within 3 to 4 days.

13 **Cut the soap** into bars and allow to cure in a well-ventilated area for 4 to 6 weeks, turning the bars over every few days to ensure that they cure evenly.

Frequently Asked Questions

Why should I use distilled water in my soap?

Distilled water is preferable for making the best, longest lasting bars of soap. Tap water often contains minerals and other additives that can have a negative effect on your soap recipe. These heavy metals typically come from the piping system.

Heavy metals and minerals can lead to DOS (Dreaded Orange Spots) in your soap. DOS soap smells awful (like moldy dirty socks), can develop a strange oily dew, and just plain looks bad. (See also What is causing those awful orange spots on my soap?, page 236.)

How much water should I use?

You can find out how much water to use by entering your recipe into a lye calculator. Typically, the water rates recommended by calculators are 28 to 35 percent of the oil weight.

Which is better to use: sodium hydroxide beads or flakes?

This is a matter of personal preference. Lye beads dissolve quickly in water but they tend to be staticy and cling to things that you probably don't want lye clinging to. Some soapers swear by dryer sheets to help reduce the static cling effect of the lye beads. I prefer to use flakes. They take a little bit longer to dissolve but I'd rather stir longer than clean up lye beads. Try both and use the one you prefer.

Can I make soap without sodium hydroxide?

Cold-process soap cannot be made without lye. If you are looking for a soapmaking technique that does not involve handling lye, I suggest melt-and-pour or rebatch methods; however, be aware that all melt-and-pour and rebatch bases are made with lye earlier in the process. So even though you aren't handling lye, someone did.

What does "superfat" mean?

Superfat refers to an excess of oils in a recipe that are calculated to ***not*** saponify with lye. Because these "loose" oils have no lye partner to link up with, they create a softer and more luxurious-feeling bar. There are two ways of calculating the superfat.

- **Before-trace superfat** discounts the amount of lye so that the oils already in the recipe are the ones being superfatted.
- **After-trace superfat** uses a recipe with a balance of oils and lye but calls for additional oils to be added after trace. This book uses the before-trace method.

Lye calculators give you options for superfatting (also called lye discounting) and make the math easy. Most soapers calculate a superfat between 3 and 8 percent. Superfats over 10 percent can lead to an overly soft bar with a shorter shelf life and a creamy or oily (as opposed to bubbly) lather. Lower than 3 percent can lead to bars that are less moisturizing and leave no room for human error in the soaping process.

Can you create a mild soap without a superfat/lye discount?

In theory, a zero percent superfat (soap that has no extra oils and no extra lye) is perfectly balanced. With the delightfully nourishing oils available to us, a zero percent superfat bar will still be an acceptable bar of soap (nicer than any synthetic detergent bar sold in stores, in my opinion, but I don't recommend it).

The longer your soap cures, the more chance the lye has to complete the last 3 percent of the saponification process (the majority of which takes place in the first 24 hours). Fully completing the saponification process with a 4- to 6-week cure and dry time will lead to a milder bar of soap.

A superfatting percentage over zero is soapy icing on the cake. However, I always recommend a 3 percent or more superfat to be within the margin of error (mis-weighing, human error, and so on).

What's the difference between palm oil and palm kernel oil?

Palm oil and palm kernel oil come from different parts of the palm fruit. They have completely different makeups and should not be used interchangeably in soaps.

Palm oil is a solid oil that is obtained from the pulp of the fruit of palm. It creates a nicely textured bar and acts as a secondary lathering agent when used in conjunction with coconut oil.

Palm kernel oil (or flakes) comes from the kernels of the palm fruit. It contributes to hardness and adds a sheen to the finished soap.

Why shouldn't I use more than 25 to 35 percent coconut oil in my recipe?

Coconut oil has an extremely high cleansing ability. Some people find that coconut oil has a drying effect when used at over 25 percent. While I prefer a bar that has oils besides coconut, I do not find coconut oil drying to my skin when used all the way up to 35 percent, but not all soapers agree with me.

How can I change the size of my batch?

The easiest way is to enter the recipe as-is into a lye calculator, which will break down the recipe into percentages. Use the percentages to change the size of your recipe. Many lye calculators, both online and in phone apps, have resizing options. If you'd like to cut a batch in half, simply enter in the smaller amounts of oil into the lye calculator to confirm the new amount of lye and water you'll need to use.

Though doing the math yourself often seems like an easy thing, going through a lye calculator every time you make a change is the safest and most accurate method.

Do I need to add a preservative to cold-process soap?

No. Properly prepared and cured soap doesn't go bad, though some of the fragrance may dissipate over time. Some antioxidants that are commonly added to soap can help extend the life of the oils used. These include grapefruit seed extract (GSE), rosemary oil extract (ROE), rosemary oleoresin extract (not the same as the essential oil), and Vitamin E.

What is lecithin?

Lecithin is a triglyceride that can be derived from soybeans, egg yolks, and sunflower oils, among other sources. It can be added to soap at trace. Its natural water-loving properties and mild emulsification abilities (helps to mix oil and water) make it an excellent soap additive.

Some soapers like to use lecithin in their soap to create a slower trace. If you choose to use it, add lecithin to your oils at 1 tablespoon per pound of oils. You can purchase

lecithin in liquid or powder form at many specialty natural food stores.

What is sodium lactate?

Sodium lactate acts similarly to a salt in the cold-process method by helping to make a harder, shinier bar of soap that is easier to unmold. It is typically added to the lye-water at 1 teaspoon per pound of oils in the recipe.

What function does stearic acid serve in soap?

Stearic acid is a white, waxy, fatty acid that can be derived from palm oil or animal fat. Stearic acid acts as a hardening agent in soap and can be used at 0.5 percent. It does accelerate trace. If you use it in soap, melt it separately and hand stir in at thin trace to soap that is 135 degrees or above. If the soap is cooler, the wax may congeal in tiny clumps.

What function does beeswax serve in soap?

Beeswax acts as a hardening agent and can be used at up to 2 percent of the weight of the base oils. (Example: 10 ounces of oil could take up to 0.2 ounces of beeswax). It will accelerate trace, so if you use it in soap, melt it separately and hand stir in at thin trace to soap that is 140 degrees or above. If the soap is cooler, the wax may congeal in tiny clumps.

Is it necessary to test the pH of my soap?

An excess of lye in soap can cause burns when the soap is used. If you have any questions about the caustic levels of your soap (there are liquid pockets in your soap, or your soap is super hard/brittle), you should test the pH levels. You can use pH testing papers by wetting the soap with distilled water, working up a bit of a lather, and then dipping the testing paper in it.

Or you can use the traditional "what did they do before pH testing papers?" method and lick your soap. If it "zings" a bit on your tongue, it is lye heavy and should be discarded.

Mixing Ingredients

What is causing my soap to curdle?

Generally, batches curdle due to additives, usually the fragrance oil or essential oil. Curdling or ricing is not the end of the world, and probably won't ruin your soap. The solution is to mix, mix, mix, either with a whisk or a stick blender until the soap is smooth again. If the soap never goes back together, follow the modified hot-process technique on page 234.

Why is my soap batter separating?

There are a number of reasons that soap batter might not come together properly.

- It hasn't been mixed long enough.
- The right stirring utensil was not used (stick blenders are your friends).
- There is not enough lye in the mixture (due to mis-measuring or using old lye).
- The fragrance or essential oil isn't soap safe.
- Potassium hydroxide was used instead of sodium hydroxide.

If you cannot stir the entire mixture back together using a stick blender, it is probably ruined and will have to be discarded (see How to Dump a Bad Batch, page 234). You can try the modified hot process described on that same page, but depending on the reason for the separation, the soap might not be salvageable.

How can I prevent air bubbles in my soap?

Start with the oils; slowly pouring them into the container against a spatula will help to prevent air bubbles. When it's time to add the lye-water, pour it slowly against a spatula or against the shaft of the stick blender. Burp the stick blender by gently tapping it against the bottom of the container you're mixing in before you start to blend to ensure no trapped air is whipped into your soap. Finally, once you have poured your soap into the mold, firmly tamp the mold on the table a few times to release any bubbles that may have formed.

What are the little bits that float on top of my lye-water solution?

Most lye has additives in it to keep it free flowing and clump free. Some of these do not dissolve well. That won't affect your soap, but if you are concerned, wearing all your safety equipment, strain the lye-water through a stainless steel strainer to catch any floaters.

How can I get my additives to suspend in my soap instead of sink to the bottom?

Mix in your solid additives, like herbs or oatmeal, at a thicker trace.

How much should I stir or blend my soap batter before I add color/fragrance oil/essential oil?

I add color and fragrance/essential oils at light trace. I start with the color just in case the fragrance or essential oil does something unpredictable. If you are extremely familiar with how a fragrance or essential oil will act in your soap (meaning you've soaped with it many times with no issues), you can add the fragrance oil to your base oils before you add the lye-water.

Is it okay to blend essential oils and fragrance oils?

Sure! As long as both fragrance and essential oils are rated as skin-safe and you stay within the total suggested usage rate for the blend (usually under 1 ounce per pound of finished soap).

Will my soap smell like almond or peach if I use sweet almond oil and peach kernel oil as a base oil in my recipe?

Fixed oils, the kind that are used to make the base soap, are very different from the fragrance or essential oils added for scent. Fixed oils are made up of fatty acids that turn into soap when mixed with lye. Fragrance and essential oils are made from aromatic compounds that don't come from the oil pressing and generally come from plants other than those used to make fixed vegetable oils. So the answer is no. Natural, pressed, fixed vegetable oils are not scented.

What's causing my soap to go brown?

Vanilla-based fragrance oils can cause discoloration because most are made with a chemical compound called vanillin that turns brown when added to products containing water. Not every vanilla-based fragrance oil contains vanillin or will discolor, but most will.

Many delicious bakery fragrances (chocolate, cream cheese, frosting) will discolor to brown. Some brown soaps lather brown, which can be a surprise to new soapers, though it has no effect on the purity or cleaning power of the product. If you love the scent of vanilla, some discoloration is a small price to pay, but you might want to design your recipes accordingly.

Can I make substitutions in my recipe?

You can, but run all substitutions through a lye calculator, no matter what. You also need to take into consideration the properties of the oil(s) that you want to substitute. For example, you shouldn't use coconut oil (solid at room temperature) in place of olive oil (liquid at room temperature), but canola oil will work because both oils have similar properties in soap. Refer to the oil descriptions in chapter 4 to pick the best substitutions.

What kinds of milk can be used to make soap?

All milks work well in cold-process soaps. In addition to animal milks such as goat and sheep, alternative milks made from products such as almond, rice, and hemp also do well in soap. When purchasing milk for soap (especially alternative versions) look for one with the least amount of additives possible. Since any additional ingredients can affect your final product, keeping it simple is a good thing.

Can I add fresh fruits or vegetables to my soap?

Anytime you add fresh ingredients to your soap, they have the potential of going bad, even in cold-process. The resulting bars will still last six months to a year but not indefinitely like those made with most cold-process soap recipes. However, some fruits and veggies have antioxidant properties that appeal to people. A puree can also add some texture and color to the soap, depending on what you add. Unfortunately, there's nothing that you can add to the soap to prevent fresh ingredients from going bad eventually.

The bacteria in fresh fruits, veggies, and teas are neutralized and outright killed by the lye-water, so if you do add fresh purees to your soap, add them to the lye-water directly or at extremely thin trace to prevent mold. Do not be surprised at the foul smells and colors some of them make initially. Usually this smell goes away over a 4–6 week cure time.

I've heard of people adding sugar to their soap. Why would they do this?

Many soapers find that 1 tablespoon of sugar per pound of oils enhances the lather of their soap. Dissolve the sugar in warm water and add it at thin trace, before the color and fragrance.

I've seen people using silk in their soap. Does this really help?

I don't notice a difference in my soap with the addition of silk but some soapers swear it adds a silky, smooth feel to the lather and ultimate feel of the skin after bathing.

Silk comes in three forms: liquid, powdered, or threads. You can add liquid silk to your soap at thin trace at 0.5 to 1 percent of your total oil weight. If you're using powder or threads, dissolve it in the lye-water. The powder or threads are typically used at 1 to 2 percent of your total oil weight.

The Tracing Process

What does trace look like?

Trace has happened when the soap thickens enough to hold itself up and you can see faint trailings "tracing" on the top of the soap. Depending on the recipe, you will be looking for different degrees of trace.

- **Thin trace** is like a melted milkshake. The product is fully emulsified and mixed together, but it looks thin and a little translucent, and the trailings will not suspend or hold on the surface of the soap.
- **Medium trace** is like cake batter, creamy and opaque, with trailings that stay on the surface of the soap for a few seconds.

- **Thick trace** is like pudding. It can mound like whipped cream and is fully opaque. It is difficult to work with for intricate designs but is used in several of the recipes in this book, such as the Cupcake Cuties (page 114).

How long will my soap take to trace if I stir it by hand instead of using a stick blender?

You can hand stir your soap, but be prepared for a lot of mixing. It's not uncommon for soap to take a couple of hours of constant hand mixing to trace. Using a stick blender, by contrast, takes minutes.

Why won't my soap trace?

There are a variety of reasons your soap might not be tracing. Here are the most common.

- Mixing by hand. If you're not using a stick blender, your soap could potentially take hours to trace.
- Using lye that isn't fresh. Old lye that has taken on extra moisture and is not weighing correctly will make for soupy soap.
- Mis-weighing ingredients. If your soap is not tracing, it could be because your measurements are off, either through operator error or because your scale is incorrect.
- Using the wrong type of lye. Potassium hydroxide does not trace as sodium hydroxide does.

What causes soap to seize/accelerate?

While there can be a few issues with recipe formulation (too many hard oils, soaping at too hot or too cool a temperature), typically your culprit is the fragrance oil or essential oil that you are using. Check with your supplier before ordering, as the company should be able to give you an idea of how well a fragrance oil performs in cold-process soap. Even when you buy a soap-safe fragrance that has been fully tested, make a small test batch with your particular blend of oils to ensure that the fragrance works well for your recipe.

How can I slow down trace?

1. Work at lower temperatures. Give your lye-water plenty of time to cool. Some soapers mix and weigh their oils and lye water (in separate containers) the day before and have everything at room temperature when they soap.
2. Don't overuse your stick blender. Try whirling it for 10 seconds and then using it like a spoon, whirling intermittently as needed.
3. Make sure your recipe uses a majority of oils that are liquid at room temperature, like olive oil, rice bran oil, or canola oil.
4. Ensure you are not water discounting (see pages 13 and 16–17 for an explanation).
5. Experiment with additives that may help inhibit trace, such as lecithin at 1 tablespoon per pound of oils.

What is making my soap grainy?

Fragrance oils can contribute to graininess in soap or it could be that your soap is trying to separate due to inadequate trace, temperature issues, or oil choices. If your soap is starting to get grainy, mix it with a whisk until it's smooth again.

If it continues to grain up and starts looking like cottage cheese, you can try to stick blend it smooth on medium to high speed. If that does not work, you can go ahead and pour the entire batch into the mold and wait 24 hours to see if the soap sets up and stays solid, but be warned, you may need to abandon the recipe entirely.

If it doesn't set up, saving this batch is still possible through a modified hot-process

soapmaking technique (see SOS (Save Our Soap!), page 234).

Curing and Unmolding

How much should I stir or blend my soap batter before I pour it into the mold?

You can pour your soap into the mold at any time after trace is achieved; if you are building layers as your final design, you'll want to pour at a thicker trace, but if you are swirling, you may prefer to pour at a thinner trace. Just make sure that a true trace is achieved.

How long does soap take to cure?

Kevin Dunn (Professor of Chemistry at Hampden-Sydney College, Virginia, and author of the book *Caveman Chemistry and Scientific Soapmaking*) tested and tested and tested this with his chemistry students and found that the majority of the saponification reaction happens in the first 24 hours after making soap. Three percent or less happens in the next 4 to 6 weeks of curing time. The additional time is mostly spent evaporating remaining water and ensuring your soap will be long lasting and exceptionally mild (that last little bit makes a world of difference).

How does the air temperature affect the soaping process and curing time?

Humidity in the air and the ambient temperature of your soaping room can affect both your soaping temperatures and the amount of time it takes your soap to cure. Because curing time is partially about releasing moisture from the bars, any moisture in the air can inhibit the process. Additionally, if you are soaping in a warmer room, your gel phase may be warmer and can cause cracking in your soap or an uneven surface to your soap (affectionately referred to as "alien brains"). Extremely cold rooms can increase the amount of soda ash.

What is gel phase?

Gel phase occurs when soap in the mold reaches and maintains a warmer temperature than you poured it at (usually by 40 to 60 degrees). Insulating helps to encourage gel phase. The look of soap in the middle of gel phase is translucent and jelly-like. Gel phase intensifies the look of most soap colorants, and some soapers prefer the look of gel-phased soap. Soap that has gone through gel phase is shinier, has a more translucent look, and is usually harder.

It is not a necessary step; if you prefer not to gel your soap, your soap will still make perfectly good bars after the full cure time. To inhibit gel phase, cool your soap as quickly as possible after mixing it or soap at a lower temperature and don't insulate the mold. Soap that has not gelled is generally creamier in appearance and slightly softer and stickier in the first few weeks after cutting.

Optional: If your soap lab is very cool, you may wish to place your insulated soap mold on a heating blanket set to low for the first 30 minutes of the curing process. After 30 minutes, turn the heat blanket off and allow the insulated soap to reach room temperature over 24 hours.

Why is my soap taking so long to become ready to unmold?

How soon a soap is ready to unmold depends on a few factors.

- Super soft recipes, typically those with a high percentage of liquid oils, tend to want to stay in the mold longer.
- The mold itself can play a role; most silicone molds create an airlock that can be difficult to break with fresher soap. Molds with individual cavities can make it especially difficult to release the bars.

SOS (Save Our Soap)!

A Modified Hot-Process Technique

It's sometimes possible to save a batch of soap that refuses to trace, but it takes some doing. It involves using a modified hot-process technique, so set aside a full two hours of uninterrupted work time and suit up as though you're starting over.

- Pour all of the gloppy, separated soap into a stainless steel pot. The pot should be no more than one-third full.
- Put the pot on the stove on medium-low heat.
- Stirring frequently, baby the soap until it turns into a gloppy, gelatinous mass with the consistency of mashed potatoes. This process will take 15 to 60 minutes depending on several variables (how hot the stove is, how separated the soap was). Note: Never leave soap on the stove unattended.
- Glop this soap into molds. Wait 2 to 4 days until it is hard enough to release from the molds. Dry for the traditional 3 to 6 weeks.

How to Dump a Bad Batch

If your soap cannot be salvaged, let the soap cool and harden up as much as possible and, wearing full safety equipment, triple bag it in plastic bags and dispose of it in the trash.

- Finally, the humidity in the air or very cold temperatures can also cause the soap to want to sit in the mold for longer.

Using sodium lactate can facilitate a quicker unmolding, especially when working with silicone molds, as can taking a 5–15 percent water discount (though water discounting can accelerate trace). If your soap is not ready to come out, be patient and give it a few days. It is not worth ruining a mold or mangling your soap to force a batch to release before it is ready to meet the world.

How does freezing make it easier to unmold soap?

Frozen soap does not flex, so it is easier to remove from the mold. If you do freeze your soap, you can do so immediately after making it (if you don't want it to go through gel phase) or after the soap has fully gelled (generally 24 hours). Let it freeze for at least 12 hours, then thaw for several before cutting into bars (otherwise it will be too brittle). Ensure it dries fully at room temperature before wrapping or storing.

When do I cut my soap?

You can usually cut your soap right after it is unmolded. However, not every recipe will be ready to cut that soon. If your soap sticks to your knife, it is still too soft to cut (make sure you are using a non-serrated blade). If that's the case, allow it to sit for a day or two before attempting to cut it.

What is the white powdery film on top of my soap?

White powder on the top of your soap is usually soda ash. Soda ash is sodium carbonate that forms when the sodium hydroxide in the soap contacts the carbon dioxide in the air. This can be a factor of temperature (cooler ambient temperatures bring it out, for example, and not going through gel

phase can increase soda ash). Here are some ways to prevent soda ash from forming.

- Spray the soap with 91% rubbing alcohol 3 times during the first 90 minutes of cooling. Or place a sheet of plastic wrap directly on the soap, creating an oxygen-blocking layer.
- Insulate the soap so it cools more slowly.
- Pour at a thicker trace.
- Add melted beeswax at trace (as 0.5 percent of your total oils). Beeswax accelerates trace so be sure you're ready to pour if you use this method.
- Use 5 to 10 percent less water than the recipe calls for.
- Decrease the superfat by 1 to 2 percent.

What is causing those weird clear streaks in my soap?

Those streaks that form as the soap sets are usually glycerin rivers caused by a combination of heat and color additives. Some color additives, such as oxides, showcase these clear glycerin rivers making them more obvious. Titanium Dioxide also seems to encourage glycerin rivers.

Glycerin is a natural byproduct of cold-process soap making, and the streaks will not affect the usability of the soap. If you don't want glycerin rivers, lower your soaping temperatures by 10 degrees to get a cooler gel phase.

Why is my soap soft and spongy?

It could be a recipe formulation (too many liquid oils in the recipe), a superfat issue (soaping at too high a percentage of superfat), or a mis-measuring issue (not enough sodium hydroxide and/or too much water). Soft spongy soap is fine to use, but probably won't ever become as hard as a typical bar. This soap will have a shorter shelf life in the shower.

Why is my soap hard and brittle?

This could be due to using not enough water or too much sodium hydroxide. It could also result from a recipe formulation issue such as too much palm oil or cocoa butter or too much of a hardening agent (such as stearic acid or beeswax). Check the pH level of the soap before using it (see Is it necessary to test the pH of my soap?, page 229). Discard if it's over 10. If the pH is lower than 10, double check your water amounts and decrease hardening agents such as stearic acid or beeswax the next time you make that recipe.

Why did my soap crack?

Cracking is typically due to overheating during the mixing process or overdrying in the mold. Overheating can cause a mini-eruption within the soap that can push through the surface and cause a range in severity of cracking, from the tiniest little peaks to full blown volcano. Soaping at lower temperatures can prevent overheating.

Overdrying can come from overuse of 91% isopropyl alcohol when sprayed on the surface of the soap to prevent soda ash. Suppress the urge to overspray the soap; two or three good spritzes every 30 minutes or so for the first 90 minutes should be plenty.

Why does my soap have pockets of lye-water?

Either the soap was poured before trace was achieved (it may have achieved "false trace", a stage that looks similar to but is not quite trace, prior to pouring the soap), or there was too much lye-water used in the batter. If there are lye-water pockets in your soap, you cannot use it. This batch will be too caustic to use and will have to be thrown away (see How to Dump a Bad Batch on the previous page).

Why does my soap have an oil slick on top?

Sometimes soap in molds forms a slick of oil on the surface. If it's over, say, half of a pinky fingernail worth (⅛ inch or 0.3 cm), let the soap sit for an additional one to three days to see if the oil reabsorbs. If it does not or the oil slick is thicker than ⅛ inch, use the modified hot-process technique on page 234.

If the oil slick is fragrant or is very thin, it is most likely that the fragrance or essential oil was not fully incorporated into the soap or sweated out. In this case, decrease the fragrance or essential oil by 10% for this particular oil next time you soap.

To be on the safe side, throw it out or try the modified hot-process technique described in Save Our Soap (page 234). Or you can turn it into laundry soap; learn how by searching for "DIY Laundry Soap" at www.soapqueen.com.

Why is my soap leaking essential/fragrance oil?

The fragrance or essential oil was not mixed in well enough, or too much fragrance or essential oil was used. Decrease the amount in your next batch for this particular fragrance or essential oil by 10% and work to blend it in fully. Wipe off the essential oil or fragrance oil, and allow your soap to fully cure before testing the pH. If the pH of the soap is under 10, this soap should be safe to use.

What is causing those awful orange spots on my soap?

Dreaded Orange Spots, commonly known as DOS, are caused by oils oxidizing as the soap cures and leaving surface spots that are typically a rusty color. They won't ruin your soap, but they aren't pretty, can smell bad, and sometimes create any oily surface on the bar. DOS can be caused by any or all of the following:

- Using tap water
- Using old or rancid oils
- Using non-stainless steel containers
- Curing the soap on a rusty surface
- A warm, humid curing environment
- Impeding airflow by wrapping before soap has fully cured

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Lye Calculator App

https://itunes.apple.com/app/soap/id329774550?mt=8

(Or search for the word "Soap" in the Apple iTunes store.)

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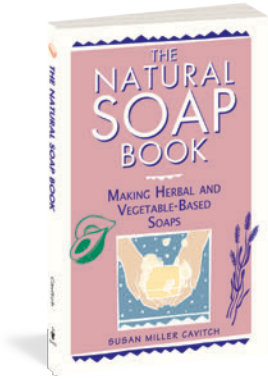

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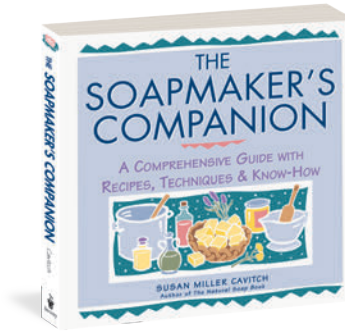

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