A Soapmaker's Guide

The Quick and *Clean* ~~Dirty~~ Version

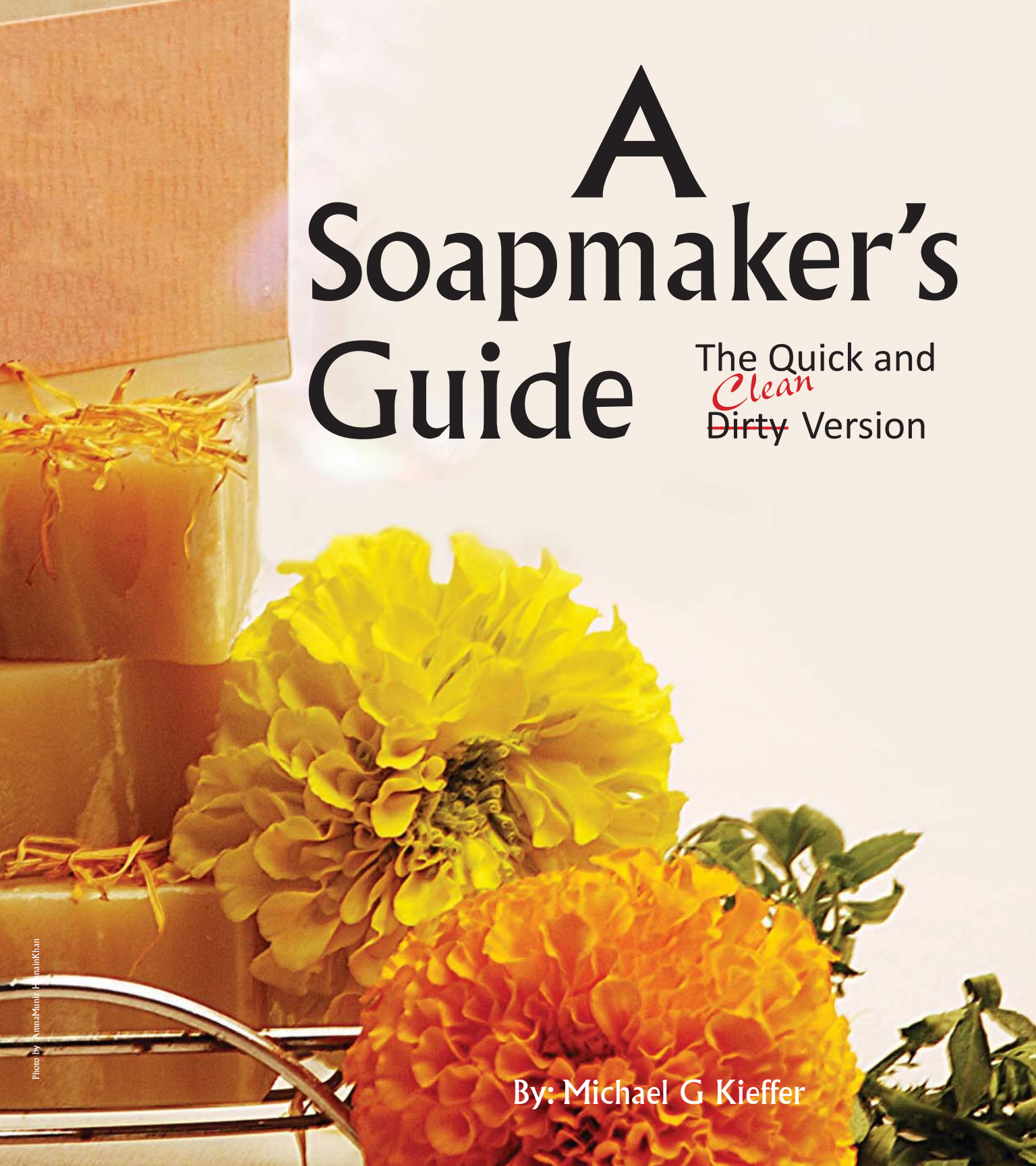

Photo by AmnaMunir HumainKhan

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Photo by Emma McCreary

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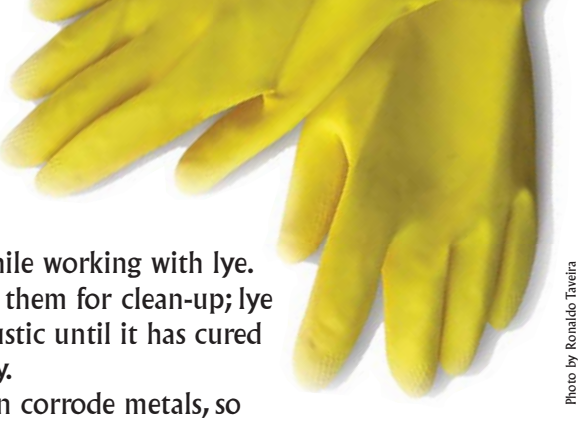

Photo by Ronaldo Taveira

The Safety Rules

The rules presented here may seem harsh and difficult to retain, but if you follow them to the letter as you make your first soaps, they'll soon become habits and will give you the confidence to tackle each new project safely and enthusiastically. We're all creatures of habit; once you're learned good soap-making habits, they'll pay off for as long as you enjoy this craft.

Protect your work station and floor surrounding it by covering them with newspapers or other protective materials. Lye and liquid soap have a way of finding tabletops and floors when you're not prepared-so be prepared.

Make sure that the pitchers you select are safe for use with lye. Unless they're labeled "dishwasher safe," perform the following test. Place the pitcher upright in your sink and pour boiling water into them. Gently test the handles. The pitchers should not melt or become flexible, and the handle should not weaken at all. Fresh lye can reach temperatures of 170° to 200° F (77° to 93° C), so don't use pitchers that don't pass this test with flying colors.

Use your lye-mixing pitchers only for mixing lye. Using an indelible-ink pen, mark each pitcher clearly: "LYE PITCHER! DO NOT USE FOR ANYTHING ELSE!" Keep lye pitchers out of sight when they're not in use and keep them out of reach of children at all times. No one-repeat, no one-should be able to mistake them for beverage containers!

Read all safety precautions on the can of lye before you begin. If the granules or solution accidentally come in contact with your skin or eyes, flush immediately with cold water. If burns ensue, contact a physician. Even dry lye granules can burn your skin by attracting moisture from the air.

Always wear protective gloves and safety glasses or goggles while working with lye. Also wear them for clean-up; lye soap is caustic until it has cured thoroughly.

Lye can corrode metals, so remove all metal jewelry before making soap.

Never inhale lye fumes while you're mixing the lye with water, as the fumes may injure your lungs.

Place pitchers filled with hot lye solutions away from the edge of your work surface and out of reach of children and pets. Make sure the pitchers won't be in your way as you work.

Before you pour lye from a pitcher, make sure that the pitcher lid is tightly in place. Pour slowly and evenly to avoid splashing and the possible burns that might result.

When handling a pitcher of lye solution, always brace the bottom of the pitcher with one gloved hand as you grip the handle securely with the other.

Store curing soap well out of reach of animals and children. The lye in your basic soaps will remain caustic for several days after the bars are cut.

Never leave fats and oils unattended while you're heating them. These substances are flammable and may catch fire if they are allowed to boil. If you should ever have to deal with fats that have burst into flames inside the pot, first slide a tight-fitting lid across the top of the pot and then turn the burner off. (Do not bring the lid straight down onto the pot, or air currents will force the flames out and around to your hand.) The fire inside the pot will go out shortly after you've deprived it of oxygen in this fashion. Wait until the contents have cooled completely before attempting to remove the lid or move the pot. Also keep a good, all-purpose fire extinguisher in a convenient location and use it if necessary!

Photo by Graeme Kerr

To Begin

Whether you plan to make hand-cut bars of basic soap or hand-milled soap, which can be sliced into bars or molded, the first part of the soapmaking process is the same: You will make a batch of basic soap. In this process, hot lye and melted fats and/or oils are brought to equal temperatures, mixed together, poured into primary molds, and cured.

To make hand-milled soap, you'll grate, remelt, and pour mold (or slice) the batch of basic soap, mixing in fragrances, colors and additives during the remelting stage. Although ingredients such as scent oils may be added to a basic soap, they're usually mixed in during the hand-milling process instead. If you'd like to add scent oil to a basic soap, do so just before the soap is poured into the primary mold: stir well to disperse the scent evenly.

Making soap doesn't require a workshop filled with equipment; many of the necessary items may already be in your kitchen. Others, such as a scale and thermometers, you'll probably need to purchase.

Photo by Emiliano Spada

What You Need

Supplies for selected basic soap recipe
Newspapers
Safety glasses or goggles
Rubber or Plastic gloves
Scale
2 lye pitchers
Long-handled wooden or plastic spoon
2 kitchen thermometers
Large dishwater pan
Soap pot
Wooden or stainless steel ladle
Primary mold with lid
Insulating materials
Freezer or butcher paper: sheet of rigid plastic: or needlepoint screen
Flexible cardboard for making templates
Ruler
Pencil
Scissors
Nut pick or other pointed tool

The Method

1. Read through all the steps carefully. Then select a basic soap recipe. Cover a large, flat counter top or table and the surrounding floor with several layers of newspapers. Assemble your equipment and ingredients, and make sure that all the equipment meets the requirements described above.

2. Re-read the safety precautions. Then put on your gloves and safety glasses!

3. Weigh the required amount of lye into one of the pitchers. To do this use either of the following methods.

Method #1: Place the empty pitcher on the scale and set the scale to zero. Then use the pitcher as a weighing container. If you've set the scale correctly, it will register the weight of the lye but not the weight of the pitcher.

Method #2: Set the scale at zero and weighs the pitcher. Then calculate the weight of the pitcher plus the weight of the required lye. Add lye to the pitcher until you reach this total weight.

Set the pitcher of lye aside

Photo by S D C EXPORTS

Photo by Gary Scott

4. Using the same method that you used to weigh the lye, weigh the required amount of water in the empty pitcher. (Be careful not to place the water in the pitcher that contains lye!)

5. Make sure that the pitcher with lye in it is resting on a protected surface. Carefully lift the pitcher with water in it, and pour the water into the pitcher containing lye. For safety's sake, you must avoid splashing! Don't make the mistake of adding the lye to the water.

6. After you've added all the water to the lye, stir the solution gently with a wooden spoon until you're sure that all the lye has dissolved. If you don't stir thoroughly, the lye may cake one the bottom of the pitcher and will be difficult to break up and dissolve. Place one of your thermometers in the pitcher. The lye, which will have heated up considerable, is likely to register from 150° to 200° F (66° to 93° C).

7. If you don't plan to make soap for several hours or more, just set the pitcher of hot lye solution aside to cool in a safe place, placing it on sheets of newspaper or an old towel. Be sure the lid to the pitcher is firmly in place.

8. Before continuing, read this step and step 9 carefully, as you will be working on these steps simultaneously.

9. At this stage, you should either have a cool lye solution, made well in advance, or a hot lye solution that has just been mixed. As you melt the fats and then cool them to 100° F (see Steps 9 though 12), you must bring the temperature of the lye to 100° F (38°C), too.

To rewarm cool lye, place the pitcher, with the lid removed and a thermometer in place, in a pan of hot tap water. Watch the lye temperature closely so that you don't overheat the solution. If you accidentally let the solution get too warm, remove it to cool down again.

To cool down a batch of hot lye solution, fill a pan or your sink with cold water. Place the pitcher of lye in it, making sure that there isn't so much water in the bath that the pitcher floats: if the pitcher tips, the lye may burn you. You'll also have to start all over again! Place a thermometer in the solution and stir the solution gently with your spoon, monitoring the temperature carefully.

As the temperature approaches 100° F remove the lye pitcher from the cold or warm bath.

Photo by Bruno Neves

Photo by Zsuzanna Kilian

10. Before continuing, read this step and step 9 carefully, as you will be working on these steps simultaneously.

As you continue to monitor and adjust the temperature of the lye solution, weigh out the required fats for your selected recipe. If your scale will measure up to 25 pounds (11.4 kg) and can be reset at zero, weigh the ingredients in the soap pot itself, setting the scale back to zero before adding each one. With smaller scales, it's better to weigh the ingredients separately and then place them in the pot one by one. Be precise no matter which method you choose: even small mistakes can result in failed batches of soap.

11. Once the fats have been measured and placed in the soap pot, set the pot over low to medium heat and stir the contents gently to help them melt. Using your mixing spoon to mash any small floating pieces (don't worry about tiny pieces.), but of course you are working will hot fats so use caution. Heat the mixture just to the point at which the fats have melted, then remove the pot from the stove.

12. To cool off the fats quickly, place the soap pot in a cold-water bath in your sink, but make sure that the water isn't frigid, or the fats may begin to solidify again on the inner surface of the pot. Stir continuously to help reduce the temperature, and as it approaches 105° F (41° C), remove the pot from the cold-water bath.

13. Continue to juggle the temperatures of the lye solution and the fat mixture so that they both reach 100° F simultaneously. This may be frustrating at first, but after you've made a few successful batches of soap, you'll that patience has its rewards! Keep your had, always use care (especially when handling the lye), and don't panic. Just continue to use the cold and warm baths.

Occasionally, you may find that the fats solidify slightly as they approach the target temperature. This is especially likely to happen with recipes that call for tallow and/or coconut oil. Double-check your thermometer against another thermometer: if it's accurate, ignore this slight solidification and continue. If that thermometer isn't accurate or if the fats solidify completely, remelt the fats just to the melting point in a warm-water bath and recheck the temperature with a different thermometer.

14. Double-check the temperatures of both the lye solution and the melted fats, making sure that they're both between 95° and 100° F (35° to 38° C).

Photo by Pawel Kryj

15. Be sure that you're wearing your rubber gloves and safety glasses and that your work surface is protected. Tighten the lid securely onto your lye pitcher: the lid must not come off during the pouring process. Then, while stirring the fats gently and steadily, pour the lye solution into the soap pot in a thin, steady stream, stirring the mixture continuously as you do so. Only by stirring in this fashion can you be certain that all of the lye will be absorbed into the fats. If you see substantial amounts of the lye floating on top of the fats, stop adding more until you've stirred in the floating lye. Then resume pouring and stirring until all the lye has been absorbed.

16. Continue to stir the mixture gently. The fats must be kept in smooth motion at all times. Be careful: stirring haphazardly or splashing of the caustic solution. As you continue to stir, the mixture will thicken, turn opaque, and become grainy rather than smooth.

Keep stirring until you can see what are known as trailings: these are lines of soap that float on the surface of, yet remain distinct from, the soap in the pot. Trailings look a bit like the ripples on top of instant pudding, although at times they're much more subtle in appearance. The best way to test for them is to lift your spoon out of the mixture and drizzle a thread of soap across the surface of the soap in the pot. Just how distinct the trailings are depends largely on how thick the soap had become.

Photo by Saturday Soap

Trailings don't jump up and down to catch your attention-more's the pitty- and can be hard to identify, especially for beginners. Poor lighting and particular angles of vision make them especially difficult to see.

The stirring process can last anywhere from fifteen minutes to one hour, depending on the ingredients in the soap you're making. Sop that are high in tallow, for example, will show trailing much more easily that soaps containing large proportions of liquid vegetable oils. If you've stirred for nearly an hour and still can't see trailings, go ahead and proceed as if you have seen them. The signs are probably there, but you're not experienced enough yet to recognize what you're seeing.

Your soap should still be warm when you stop stirring it. Although it's possible to stir too long, your common sense should kick in before this happens. Once you've made several batches of soap, your experience and instincts will tell you when to stop stirring.

17. Gently pour or ladle the warm soap into the primary mold. Scrape the sides of the pot and add the scrapings to the mold, too.

18. Place the lid on the mold and wrap the entire mold in insulating materials, like old towels. Take this step as quickly as possible, or your soap will "catch cold"

19. Place the wrapped mold in a warm place and allow it to sit undisturbed for 48 hours. The soap must cool slowly. As it does, it will begin to "set up" or harden into the mold. Cooling the soap too rapidly will ruin it and cause separation, either partial or complete, of the lye and fats.

20. After 48 hours have passed, unwrap the primary mold and remove the lid. Unless the surrounding air is especially cold, your soap should still be warm to the touch. (Note that the soap is still caustic, so touch it only while wearing gloves!) The soap will look solid, but your gloved fingers should leave an impression on its surface, Inspect the soap by looking though the sides and bottom of the clear primary mold: all surfaces of the block of soap should appear solid.

21. If the surface of the soap is still very soft, leave the soap in the uncovered mold and expose it to the air for a day or two; the surface should harden as the soap begins to dry. When the exposed surface is finger-impression hard, gently pull the sides of the mold away from the sides of the soap.

Then turn the mold upside down over a sink or tub and press the bottom of the mold to release the soap. (Avoid working over a tabletop; trapped lye in the soap will damage the table and may burn you as well.)

Photo by Jean Scheijen

Be especially careful with the block of soap if you plan to make hand-cut bars; you'll want as perfect a block as possible. If the block doesn't release easily, give it more time to dry; especially soft soap may take up to several more days.

Place the block of soap on a clean surface; white freezer or butcher paper, a rigid sheet of plastic, or a plastic needlepoint screen will all work well. Don't use cardboard or newsprint, as the soap will still be soft enough to absorb color from materials.

At this point, you'll need to decide whether to slice the block into bars of basic soap or take the additional steps required to turn the block of basic soap into hand-milled soap. Your choice will depend on what your ultimate expectations are for your finished product, how much time you have to devote to it, and how much experimenting you're willing to do with additives. Either method will leave you with a beautiful and useful product. If you decide to make hand-cut bars of basic soap, just move on to step 22. If you'd rather hand-mill your soap, you will have to get my next book *Soapmaking Mand–Milled Tricks and Tips.*

Photo by Annie Jenkins

23. Check the block of soap every day; when it's as hard as Swiss cheese-a process that should take a week or less-it's dry enough to be scored and cut into bars. Don't let the block get too hard to slice with a knife.

24. Select dimensions for your finished bars of basic soap. Standard rectangular bars are approximately 3 inches wide by 4 inches long (7.6 by 10.2 cm), but because the cut bars will shrink s they dry, you'll need to add ½ inch (1.3 cm) to ach dimension.

25. To mark the block of soap for cutting, you're need two flexible cutting templates. The cardboard from empty cereal boxes makes an ideal material for these. Measure and cut one template as long as the large block of soap and as wide as you'd like your cut bars to be-3 ½ inches (8.9 cm), for example. Make the other template as wide as the large block of soap and as long as the desired bars -4 ½ inches (11.4 cm), for example.

26. Lay the long template along the length of the large block and, using a nut picker of similar instrument; score the upper face of the block along the length of the template. More the template so that one long edge rests along the line you've just scored. Then score along the template's opposite edge. Continue to score as many rows as possible along the large block.

27. Lay the shorter template across the block's width and use it in similar fashion to score a series of lines across the block's upper surface. When you're finished, you'll have marked a grid of rectangles onto the large block.

28. Heat the blade of a sharp knife by submerging it into hot water and using the warmed blade to cut along the longer scored lines. Make sure not to tilt the knife as you cut, or your bars will have sloped edges! Then cut along the shorter lines to form the individual bars. (Keep all cutting scraps and use them to make hand-milled soap that is talked about in my next book *Soapmaking Mand–Milled Tricks and Tips.*

29. The hand-cut bars of basic soap must now cure- the last stage of saponification. As they do, they'll become less caustic, somewhat lighter in weight, and smaller. Place the bars on plastic needlepoint mesh, white paper, or rigid plastic: they will still contain moisture and may pick up color from other materials. Space them evenly and don't allow them to touch to each other or they will stick together.

30. Allow the bars to dry for about two weeks or until the surfaces are very hard to the touch. The best way to test whether or not your soap is ready is to wash your hands with it. You'll probably have small, unnoticeable breaks in your skin, and if the soap isn't ready, the lye in it will tell you right away by making our skin sting!

31. Don't be surprised if shrinkage causes the edge of the bars to become warped and uneven. This shrinkage is inevitable, but you can minimize its effects by turning the bars over once the upper surfaces have hardened.

Photo by Jozsef Szasz-Fabian

Photo by Alexander Daucik

Now for some basic soap recipes...

Plan White Soap

This is a multifaceted soap, good for making hand-cut bars or basic soap and for milling.

Characteristics:

White or off-white in color
Mild
Long-lasting, small creamy bubbles
Shows trailings quickly
Sets up and dries quickly
May be milled and remelted in either moist or dry state
Show detailing well; best soap for fancy molds
Accepts additives very well
Quite hard when cured

Ingredients

32 ounces blended vegetable oil or olive oil
74 ounces tallow
3 ounces cocoa butter
14 ounces lye
41 ounces cold water

Photo by Foxumon

Photo by Antonio Jiménez

Cocoa Crème Soap

Because it includes coconut oil, this soap isn't quite as mild as the other described before it. The difference will only matter to those with sensitive skin.

Characteristics

Creamy white in color
Slightly harsh
Lathers readily; large, creamy bubbles
Shows trailings relatively quickly
Moderately quick to set up, but dries slowly. Will eventually fell outwardly dry, but will never have the crisp fell of other soaps
Must be milled and remelted when moist
Mills and molds well, but is best suited to large, open molds
Accepts additives well
Moderately hard thoroughly cured

Ingredients

44 ounces tallow
30 ounces coconut oil
30 ounces blended vegetable oil or olive oil
6 ounces cocoa butter
14 ounces lye
41 ounces cold water

Olive Oli (Castile) Soap

A traditional recipe from Castile, Spain this makes a beautiful and very mild soap.

Characteristics

Off-white
Exceptionally mild
Lathers quicly; plenty of medium-size, creamy bubbles
Trailing difficult to see
Sets up quickly and dries quickly
May be milled and remelted when moist or dry
Mills and molds very well; well suited for all molds
accepts additives well
Very hard and long-lasting

Ingredients

52 ounces olive oil
7 ounces lye
20 ounces cold water

Special instructions for olive oil (Castile) soap
This soap is made by following Steps 1 through 17 of the master instructions, but becasue the recipe includes only liquid oils, the wrapped primarry mold must be checked twice a day. To do this, carefully unwrap the mold and uncover the soap. You are likely to notice a thin layer of oil on top. Using your wooden spoon, carefully stir this layer of oil back into the soap, Then replace the lid and rewrap the mold. Repeat this process once every 12 hours or so until the layer of oil no longer forms. Then proceed as usual.

Resources & Tools

Online Conversions
A great conversion tool.
(http://www.onlineconversion.com)

Bramble Berry Soap Making Suppies
Essential Oils, Molds, Soaping Hardware, Tool & more.
(http://www.brambleberry.com)

The Lye Guy
Your only needed sourse for Lye.
(https://www.thelyeguy.com)

Lye Calculator Tools
For later when you start making soaps from your own fats and oils.
(http://www.soapnaturally.org/calculator/) & (http://soapcalc.net/calc/SoapCalcWP.asp)

Bibliography

Information and recipies by
The Complete Soapmaker
by Norma Coney

Pictures from Stock.xchng
(http://www.sxc.hu)

Congratulations, You have your very own hand made soap for your use and to share with all your friends. Enjoy!

Photo by Jean Scheijen

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